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Research Natural Areas in Oregon and Washington: Past and Current Research and Related Literature

Sarah E. Greene, Tawny Blinn, and Jerry F. Franklin[1,2]

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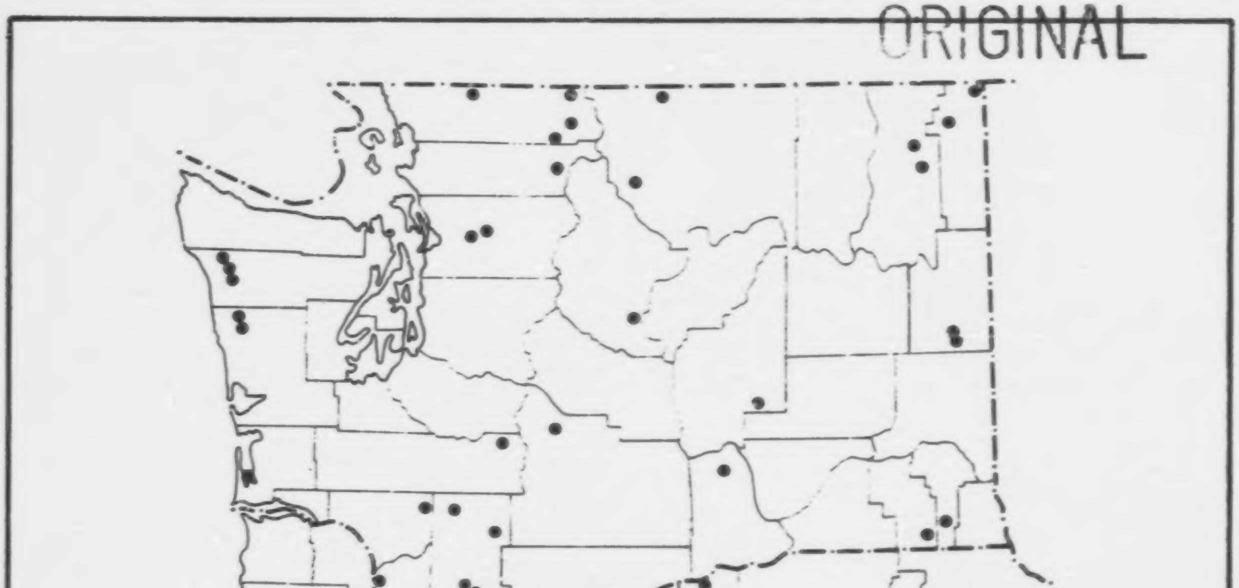

Authors

SARAH E. GREENE is a research forester, TAWNY BLINN is an editorial assistant, and JERRY F. FRANKLIN is a chief plant ecologist, U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station, Forestry Sciences Laboratory, 3200 Jefferson Way, Corvallis, Oregon 97331.

Foreword

In 1971, I joined the Pacific Northwest Forest and Range Experiment Station as Station Director and, among other duties, became chairman of the Interagency Committee on Research Natural Areas. It was a chair that I held for 4 years, and it is a pleasure to reflect, more than 10 years later, on the progress that has been made.

Oregon and Washington already had a vigorous program of preservation of Natural Areas for scientific and educational purposes in 1971. In preparation at that time were several publications important to identifying and protecting Natural Areas, including a description of natural vegetation of Oregon and Washington (Franklin and Dyrness 1973), an inventory of Federal Research Natural Areas in Oregon and Washington (Franklin and others 1972),[1] and a comprehensive inventory of Natural Areas recognized by the Society of American Foresters (Buckman and Quintus 1972).

The Interagency Committee, with participation from The Nature Conservancy and the States of Oregon and Washington then asked, "What should a well-balanced program of Research Natural Area preservation include?" This led to the publication, "Research Natural Area Needs in the Pacific Northwest: A Contribution to Land-Use Planning" (Dyrness and others 1975). Today there are 96 Research Natural Areas in the Northwest, and others are being considered by cooperating Federal and State agencies and private organizations in a well-coordinated and visionary program.

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[1] "Federal Research Natural Areas in Oregon and Washington: A Guidebook for Scientists and Educators" contains descriptions of 45 of the 48 Research Natural Areas on Federal land in 1972. Since the guidebook was published, 24 supplements, each describing a Research Natural Area, have been published. Supplement 13 (Greene 1982) revised the description of Neskowin Crest RNA given in the guidebook because the area was enlarged in 1980.

The need to encourage and stimulate the use of these areas for scientific and educational purposes was recognized in the early 1970's. Even then, some research was underway. But today, in 1986, large gains have been made in the visibility and use of Research Natural Areas. And that is the purpose of this publication--to take stock of the information garnered from Research Natural Areas and the ongoing research. This publication addresses one of the questions that will assure a well-rounded and responsible system of Research Natural Areas for the Northwest: What use has been made and is being made of Research Natural Areas?

ROBERT E. BUCKMAN
Deputy Chief, Research (retired)
U.S. Department of Agriculture, Forest Service
Corvallis, Oregon

Abstract

Greene, Sarah E.; Blinn, Tawny; Franklin, Jerry F. Research Natural Areas in Oregon and Washington: past and current research and related literature. Gen. Tech. Rep. PNW-197. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station; 1986. 115 p.

This publication lists all completed and current research projects in Research Natural Areas in Oregon and Washington and in those few Research Natural Areas in Idaho that are administered by National Forests in Oregon. The list includes project title, status, source of funding, and principal investigator and address. A list of publications pertaining to Research Natural Areas is also included. Where possible, publications and research projects are correlated. The publication outlines the scientific use and importance of Research Natural Areas as research sites for applied and basic studies. More than 200 projects and 500 publications are included for 88 Research Natural Areas and 23 proposed Research Natural Areas.

Keywords: Natural areas (research), bibliographies (research natural area), land management, research.

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Key to Abbreviations

BLM	U.S. Department of the Interior, Bureau of Land Management
DOD	U.S. Department of Defense, Navy
DOE	U.S. Department of Energy
FS	U.S. Department of Agriculture, Forest Service
FWS	U.S. Department of the Interior, Fish and Wildlife Service
NPS	U.S. Department of the Interior, National Park Service
NSF	National Science Foundation
RNA	Research Natural Area

Objectives of Research Natural Areas

A Research Natural Area (RNA) is a physical or biological unit or both, in which natural conditions are maintained insofar as possible by letting natural physical and biological processes prevail without human intervention (Federal Committee on Ecological Reserves 1977). In some circumstances, human intervention may be justified to maintain the feature for which the RNA was set aside. The introduction of prescribed fire in seral stands historically maintained by fire is an example.

The objectives for establishing RNA's are:

- To preserve examples of all significant natural ecosystems for comparison with those influenced by humans.
- To provide educational and research areas for ecological and environmental studies.
- To preserve gene pools for typical and rare and endangered plants and animals.

In 1928, the Forest Service established the first RNA, the Santa Catalina Natural Area, on the Coronado National Forest in northern Arizona. Since then, the program has grown nationwide and has included designations by other Federal agencies and cooperation with State natural area programs and The Nature Conservancy.

Research Natural Area Program in the Pacific Northwest

The Research Natural Area program in Oregon and Washington was begun in 1931 when the Metolius RNA was established on the Deschutes National Forest in Oregon. To date (1986), 96 RNA's in Oregon and Washington on Federal lands are managed by the U.S. Department of Agriculture--Forest Service; the U.S. Department of the Interior--Bureau of Land Management, National Park Service, and Fish and Wildlife Service; the U.S. Department of Defense--Navy; and the U.S. Department of Energy. Management differs somewhat between agencies, but the agencies all concur on the objectives for RNA's. An interagency committee meets twice a year to conduct RNA business and discuss common problems.

Scientific use of RNA's has always been encouraged in Oregon and Washington. Research Natural Areas provide useful and essential information to land managers as well as contribute to basic science. Research activities must be essentially nondestructive, and the scientific and educational values of the areas must not be impaired. Each agency has a set of guidelines for use, but none is particularly restrictive as long as the essential characteristics and processes of the RNA's are maintained.

Purpose of the Publication

The research conducted on RNA's in the Pacific Northwest includes forest site productivity, plant community classification, air pollutant monitoring, measurement of environmental parameters like air and soil temperature, nutrient cycling, role of woody debris in forest ecosystems, succession, grazing effects, and litter decomposition rates, as well as other types of research. A research project may last from several days to more than 50 years. Research on seedling survival in the Thornton T. Munger RNA in southern Washington was begun in the early 1930's. Also at Thornton T. Munger RNA, a study of the growth, yield, and mortality of an old-growth Douglas-fir--western hemlock forest was begun in 1947, and measurements are still being taken. Many publications have resulted from this study, and the plot information has been used in recent studies both inside and outside the RNA.

Some research in RNA's complements manipulative research being done in nearby or adjacent Experimental Forests, including the Cascade Head, H.J. Andrews, and Wind River Experimental Forests; for example, sediment routing in the undisturbed watershed of the Hagan proposed RNA has been compared with sediment routing in several disturbed watersheds in the nearby H.J. Andrews Experimental Forest. The dynamics of riparian vegetation have been studied in the Hagan proposed RNA and Middle Santiam RNA (100- and 450-year-old stands, respectively) and compared with the dynamics of riparian vegetation along streams in 40- and 5-year-old clearcuts in the H.J. Andrews Experimental Forest.

Several research projects have been conducted in RNA's throughout Oregon and Washington. The distribution and role of conifer needle endophytes were studied in 27 RNA's. Ecological monitoring of long-term effects of energy development has been studied in RNA's in the Oregon Coast Range, the Cascade Range in western Oregon, the High Lava Plains, and the Columbia Basin geographical provinces.

Interest and work in RNA's have increased dramatically in the last 15 years. Despite this increase, the value of RNA's is not adequately recognized by land managers. Without baseline information on natural systems, we cannot be sure what effects our management practices may have on the productivity of the land. As Federal agencies begin monitoring their management plans, though, RNA's should play an increasingly important role as baselines for comparison.

Many researchers and academicians, as well as land managers, are not aware of the existence of RNA's. Those who use RNA's need additional funds to conduct research in them. Support for past work has come from a variety of sources, primarily Federal and university. Sometimes private and even personal funds have been used. A paucity of funding continues, however.

This publication identifies more than 200 research projects that have been conducted during the 55-year history of the program. More than 500 publications relating to RNA's are also included. We hope this publication will make researchers and land managers more aware of the large contribution RNA's have made to science and to better land management in the Pacific Northwest.

Organization of This Publication

Research Natural Areas are listed in alphabetical order. Research projects conducted at each RNA are listed next and numbered. Information about each research project is given in the following order:

Title of research project
Status of project (current or completed, with initiation and completion date if applicable)
Source of funding
Principal investigator and address

Scientific papers resulting from research conducted at the RNA are listed next, by author and date, and the complete references are given in "References." Numbers in parentheses indicate that such papers resulted from the corresponding research project.

The appendix lists RNA's by State and managing agency.

Research Projects and Related Literature

Abbott Creek RNA, Rogue River National Forest, OR (FS)

1. Composition and distribution of southwestern Oregon mixed-conifer forests
   Completed; 1969-76
   Oregon State University
   Rod Mitchell, Colorado Women's College, Denver, CO 80220

2. Distribution and role of conifer needle endophytes (fungi on needle surfaces)
   Completed; 1976-78
   NSF and University of Oregon
   George Carroll, Biology Department, University of Oregon, Eugene, OR 97403

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3. Ecological site classification of southwestern Oregon
   Current; 1981
   FS and BLM
   Bradley Smith, Forest Science Department, Oregon State
   University, Corvallis, OR 97331

4. Flora of the Abbott Creek RNA
   Completed; 1969-79
   Pacific Northwest Natural Area Committee
   Rod Mitchell, Colorado Women's College, Denver, CO 80220

5. Genetic variation in the noble-red fir complex
   Current; 1967
   FS
   Jerry Franklin, Forestry Sciences Laboratory, 3200
   Jefferson Way, Corvallis, OR 97331

6. Vegetation classification of old-growth wildlife habitat
   Current; 1983
   FS
   Tom Spies, Forestry Sciences Laboratory, 3200 Jefferson
   Way, Corvallis, OR 97331

Carroll and Carroll 1978 (2); Franklin and Dyrness 1973; Franklin and others 1972; Mitchell 1972 (1, 4), 1979 (1, 4); Mitchell and Moir 1976 (1, 4); Old-Growth Definition Task Group 1986 (6); Spies and others 1985 (6); Vale 1981.

Alum Beds Proposed RNA, Nez Perce National Forest, ID, administered by Wallowa-Whitman National Forest, OR (FS)

1. Ecological classification of grasslands/shrublands
   Current; 1982
   FS
   Charles Johnson, Wallowa-Whitman National Forest, Baker, OR
   97814

Ashland RNA, Rogue River National Forest, OR (FS)

1. Community types of the Siskiyou Mountain Province
   Current; 1975
   FS
   Tom Atzet, Siskiyou National Forest, Grants Pass, OR 97526

2. Cone and seed crop production by mixed-conifer forests
   Current; 1982
   FS
   Sarah Greene, Forestry Sciences Laboratory, 3200 Jefferson
   Way, Corvallis, OR 97331

3. Distribution and role of conifer needle endophytes (fungi on needle surfaces)
Completed; 1976-78
NSF and University of Oregon
George Carroll, Biology Department, University of Oregon, Eugene, OR 97403

4. Ecological site classification of southwestern Oregon
Current; 1981
FS and BLM
Bradley Smith, Forest Science Department, Oregon State University, Corvallis, OR 97331

5. Prescribed burning and vegetation response
Current; 1982
FS and Southern Oregon State College
Sarah Greene, Forestry Sciences Laboratory, 3200 Jefferson Way, Corvallis, OR 97330

6. Vegetation-environment relationships in the Siskiyou Mountains
Completed; 1963-69
Oregon State University
Richard Waring, Forest Science Department, Oregon State University, Corvallis, OR 97331

7. Vertebrates of Ashland RNA
Completed; 1973
Pacific Northwest Research Natural Area Committee
Stephen P. Cross, Biology Department, Southern Oregon State College, Ashland, OR 97520

8. Wildlife utilization of riparian habitats in western Oregon
Completed; 1979
Southern Oregon State College and BLM
Stephen P. Cross, Biology Department, Southern Oregon State College, Ashland, OR 97520

Atzet and Waring 1970 (6); Atzet and Wheeler 1984 (1, 4); Carroll and Carroll 1978 (3); Cross 1973 (7); Dennis 1959; Franklin and others 1972.

Bagby RNA, Mount Hood National Forest, OR (FS)

1. Amount and role of coarse woody debris in northwestern conifer forests
Current; 1977
FS
Jerry Franklin, Forestry Sciences Laboratory, 3200 Jefferson Way, Corvallis, OR 97331

2. Distribution and role of conifer needle endophytes (fungi on needle surfaces)
   Completed; 1976-78
   NSF and University of Oregon
   George Carroll, Biology Department, University of Oregon, Eugene, OR 97403

3. Habitat type classification for western Cascade forests
   Current; 1967
   FS
   Jerry Franklin, Forestry Sciences Laboratory, 3200 Jefferson Way, Corvallis, OR 97331

4. Vegetation classification of old-growth wildlife habitat
   Current; 1983
   FS
   Tom Spies, Forestry Sciences Laboratory, 3200 Jefferson Way, Corvallis, OR 97331

Carroll and Carroll 1978 (2); Franklin and Hemstrom 1981; Franklin and others 1981 (1, 3); Halvorsen and others 1985; Moir and others 1973b; Old-Growth Definition Task Group 1986 (4); Spies and others 1985 (4); Thomas and others 1979 (1).

Baird Basin RNA, Little Pend Oreille Wildlife Refuge, WA (FWS)

Franklin and others 1972.

Beatty Creek RNA, Roseburg District, OR (BLM)

1. Biosystematic studies of Phacelia capitata (Hydrophyllaceae), a species endemic to serpentine soils in southwestern Oregon
   Completed; 1982-85
   Oregon State University Herbarium and personal (J. Stephen Shelly)
   J. Stephen Shelly, The Nature Conservancy, Helena, MT 59601

Shelly 1985.

Bills Creek Proposed RNA, Nez Perce National Forest, ID, administered by Wallowa-Whitman National Forest, OR (FS)

1. Ecological classification of grasslands
   Current; 1983
   FS
   Charles Johnson, Wallowa-Whitman National Forest, Baker, OR 97814

Blackwater Island RNA, Ridgefield Wildlife Refuge, WA (FWS)

1. Monitoring of plant communities after withdrawal of grazing
   Current; 1986
   FS, Washington State Department of Natural Resources, and Oregon State University
   Robert E. Frenkel, Geography Department, Oregon State University, Corvallis, OR 97331

Morrison 1973; Wiberg and Greene 1981.

Bluejay RNA, Winema National Forest, OR (FS)

1. Classification of ecosystems in the Mazama Pumice Region
   Completed; 1966-85
   FS
   Len Volland, USDA Forest Service, Pacific Northwest Region, 319 S.W. Pine, Portland, OR 97208

2. Distribution and role of conifer needle endophytes (fungi on needle surfaces)
   Completed; 1976-78
   NSF and University of Oregon
   George Carroll, Biology Department, University of Oregon, Eugene, OR 97403

Carroll and Carroll 1978 (2); Franklin and others 1972; Volland 1976 (1).

Boardman RNA, Department of the Navy, WA (DOD)[2]

1. Breeding chronology, habitat utilization, and nest-site selection of the long-billed curlew in north-central Oregon
   Completed; 1978-80
   Oregon State University and Northern Prairie Wildlife Research Center (FWS)
   Geoffrey Pampush, The Nature Conservancy, Portland, OR 97210

2. Bunchgrass (Agropyron spicatum) and cheatgrass (Bromus tectorum): study patches, genesis, dynamics, and status
   Current; 1982
   University of Oregon and The Nature Conservancy
   Alan Copsey, University of Oregon, Eugene, OR 97403

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[2] Boardman RNA is on the Boardman Bombing Range in eastern Oregon, but all correspondence should be directed to: Department of the Navy, Western Division, Naval Facilities Command, Building 138, Room 215, Naval Station, Seattle, WA 98115.

3. Effects of fire and grazing on Washington ground squirrels
Completed; 1982-84
Eastern Oregon State College and The Nature Conservancy
Burr J. Betts, Eastern Oregon State College, La Grande, OR 97850

4. Foraging ecology and habitat characteristics of the burrowing owl in the Columbia Basin, Oregon
Completed; 1980-83
FWS
Greg Green, Envirosphere Company, 10900 N.E. 8th, Bellevue, WA 98004-4405

5. Geographic range, habitat requirements, and a preliminary population study of Spermophilus washingtoni
Completed; 1978-80
NSF
Leif Carlson, Lewis and Clark College, Portland, OR 97219

6. Heptachlor contamination in eggs of hawks and owls
Completed; 1978-83
FWS
Charles Henny, U.S. Fish and Wildlife Service, 480 S.W. Airport Road, Corvallis, OR 97330

7. Shrub cover and shrub productivity
Completed; 1978-81
DOE
Colleen McShane, Battelle Inc., Richland, WA 99352

Carlson and others 1980 (5); Christy 1980; Green 1983 (4); Green and Anthony 1986 (4); Green and Morrison 1983 (4); Henny and others 1983 (6), 1984; Hoffnagle 1980; Janes 1983; Mayfield and Kjelmer 1984; Pampush 1981 (1).

Boner Flat Proposed RNA, Wallowa-Whitman National Forest, OR (FS)

1. Ecological classification of grasslands
Current; 1980
FS
Charles Johnson, Wallowa-Whitman National Forest, Baker, OR 97814

Boston Glacier RNA, North Cascades National Park, WA (NPS)

Hubley 1956; LaChapelle 1962; Post and others 1971; Ringe 1973; Wiberg and McKee 1978.

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Brewer Spruce RNA, Medford District, OR (BLM)

1. Distribution and role of conifer needle endophytes (fungi on needle surfaces)
   Completed; 1976-78
   NSF and University of Oregon
   George Carroll, Biology Department, University of Oregon, Eugene, OR 97403

2. Ecological site classification of southwestern Oregon
   Current; 1981
   FS and BLM
   Bradley Smith, Forest Science Department, Oregon State University, Corvallis, OR 97331

3. Ecology of Port-Orford-cedar
   Current; 1974
   NSF and Oregon State University
   Don Zobel, Department of Botany and Plant Pathology, Oregon State University, Corvallis, OR 97331

Atzet and others 1984 (2); Atzet and Wheeler 1984 (2); Carroll and Carroll 1978 (1); Franklin and others 1972; Hawk 1977 (3); Waring 1969; Zobel 1979 (3), 1983 (3); Zobel and others 1985 (3).

Buckhorn Mountain Proposed RNA, Olympic National Forest, WA (FS)

1. Plant associations and habitat types of the Olympic National Forest
   Current; 1982
   FS
   Jan Henderson, Olympic National Forest, Olympia, WA 98507

Bull Run RNA, Mount Hood National Forest, OR (FS)

1. Community classification of the Silver Fir Zone
   Completed; 1979-82
   FS
   Nancy Halvorsen, Mount Hood National Forest, Gresham, OR 97030

2. Distribution and role of conifer needle endophytes (fungi on needle surfaces)
   Completed; 1976-78
   NSF and University of Oregon
   George Carroll, Biology Department, University of Oregon, Eugene, OR 97403

Carroll and Carroll 1978; Franklin and others 1972; Hemstrom and others 1982 (1).

Butter Creek RNA, Mount Rainier National Park and Gifford Pinchot National Forest, WA (NPS and FS)

1. Avalanche communities and their environmental relationships
   Completed; 1976-81
   University of Washington
   Martha Cushman, Botany Department, University of Washington, Seattle, WA 98105

2. Classification of subalpine meadow communities in Washington Cascade Range
   Completed; 1968-73
   NPS and Oregon State University
   Jan Henderson, Olympic National Forest, Olympia, WA 98507

3. Distribution and role of conifer needle endophytes (fungi on needle surfaces)
   Completed; 1976-78
   NSF and University of Oregon
   George Carroll, Biology Department, University of Oregon, Eugene, OR 97403

4. Forest disturbance history of Mount Rainier National Park
   Completed; 1975-80
   NPS and FS
   Miles Hemstrom, Willamette National Forest, P.O. Box 10607, Eugene, OR 97440

5. Forest ecosystems of Mount Rainier National Park
   Completed; 1975-80
   NPS and FS
   Jerry Franklin, Forestry Sciences Laboratory, 3200 Jefferson Way, Corvallis, OR 97331

6. Relation of site index to habitat types in the Pacific Silver Fir Zone
   Current; 1967
   FS
   Jerry Franklin, Forestry Sciences Laboratory, 3200 Jefferson Way, Corvallis, OR 97331

Bradley and Driver 1981; Cushman 1981 (1); Franklin and others 1971, 1972, 1986a (5); Hemstrom 1979a (4), 1979b (4); Hemstrom and Franklin 1982 (4); Henderson 1973 (2); Moir and others 1979a (5), 1979b (5).

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The Butte RNA, Salem District, OR (BLM)

1. The Butte RNA monitoring program
   Current; 1984
   Salem District BLM Botany Project
   Larry R. Scofield, District Botanist, Bureau of Land Management, Salem, OR 97302

2. East and west slope effects on age structure and diameter of *Pseudotsuga menziesii*
   Completed; 1984-85
   Linfield College
   Richard Farris, Biology Department, Linfield College, McMinnville, OR 97128

Camas Swale RNA, Eugene District, OR (BLM)

1. Distribution and role of conifer needle endophytes (fungi on needle surfaces)
   Completed; 1976-78
   NSF and University of Oregon
   George Carroll, Biology Department, University of Oregon, Eugene, OR 97403

2. Examination of small stand openings in a Douglas-fir forest in the Willamette Valley foothills (student research project)
   Completed; 1977
   University of Oregon
   Dick Vander Schaaf, The Nature Conservancy, 1234 N.W. 25th Street, Portland, OR 97210

3. Forest succession and aspects of microclimate on a south-facing slope in the BLM Camas Swale Research Natural Area (student research project)
   Completed; 1977
   University of Oregon
   Carl Johannessen, Geography Department, University of Oregon, Eugene, OR 97403

Carroll and Carroll 1978 (1); Curtis 1986a.

Canyon Creek RNA, Malheur National Forest, OR (FS)

1. Community classification of the Blue Mountain region
   Current; 1956
   FS
   Fred Hall, USDA Forest Service, Pacific Northwest Region, 319 S.W. Pine, Portland, OR 97208

2. Distribution and role of conifer needle endophytes (fungi on needle surfaces)
   Completed; 1976-78
   NSF and University of Oregon
   George Carroll, Biology Department, University of Oregon, Eugene, OR 97403

3. Long-term photo analysis of vegetation change
   Current; 1956
   FS
   Fred Hall, USDA Forest Service, Pacific Northwest Region, 319 S.W. Pine, Portland, OR 97208

Carroll and Carroll 1978 (2); Franklin and others 1972; Hall 1971 (1), 1973 (1), 1978 (1), 1979a, 1979b (1), 1980a, 1980b.

Carolyn's Crown RNA, Salem District, OR (BLM)

1. Carolyn's Crown RNA monitoring program
   Current; 1984
   Salem District BLM Botany Project
   Larry R. Scofield, District Botanist, Bureau of Land Management, Salem, OR 97302

2. Northern spotted owl designated management area (SOMA) monitoring study
   Current; 1984
   Salem District BLM Wildlife Project
   Wayne Logan, Wildlife Biologist, Bureau of Land Management, Salem, OR 97302

Cedar Flats RNA, Gifford Pinchot National Forest, WA (FS)

1. Classification of the Western Hemlock Zone
   Completed; 1982-86
   FS
   Nancy Halvorsen, Mount Hood National Forest, Gresham, OR 97030

2. Distribution and role of conifer needle endophytes (fungi on needle surfaces)
   Completed; 1976-78
   NSF and University of Oregon
   George Carroll, Biology Department, University of Oregon, Eugene, OR 97403

3. Effect of mudflow deposits on soil development in Cedar Flats
Current; 1980
FS
Jerry Franklin, Forestry Sciences Laboratory, 3200 Jefferson Way, Corvallis, OR 97331

4. Long-term monitoring of posteruption channel adjustments and rates of erosion and deposition after eruption of Mount St. Helens
Current; 1980
U.S. Geological Survey
Holly Martinson, 5400 MacArthur Boulevard, Vancouver, WA 98660

5. Mammal and bird monitoring in old-growth wildlife habitats
Current; 1983
FS
S.D. West, College of Forest Resources, University of Washington, Seattle, WA 98105

6. Mortality after mudflow inundation
Current; 1980
FS
Jerry Franklin, Forestry Sciences Laboratory, 3200 Jefferson Way, Corvallis, OR 97331

7. Snag and log decomposition study
Current; 1980
FS
Jerry Franklin, Forestry Sciences Laboratory, 3200 Jefferson Way, Corvallis, OR 97331

8. Vegetation classification of old-growth wildlife habitat
Current; 1983
FS
Tom Spies, Forestry Sciences Laboratory, 3200 Jefferson Way, Corvallis, OR 97331

9. Vegetation recovery on terrace forest after mudflow inundation
Current; 1980
FS
Jerry Franklin, Forestry Sciences Laboratory, 3200 Jefferson Way, Corvallis, OR 97331

10. Floristic inventory
    Completed; 1980-82
    Pacific Northwest Research Natural Area Committee
    Lynn C. Cornelius and Reid Schuller, Department of Natural Resources, Mail Stop EX-13, Olympia, WA 98504

Carroll and Carroll 1978 (2); Cornelius and Schuller 1982 (10); Franklin and others 1972; Frenzen and Franklin 1986 (9); Halpern and Harmon 1983 (9); Janda and others 1981; Murdorff 1984; Spies and others 1985 (8); Topik and others 1985 (1); U.S. Department of Agriculture, Forest Service 1981.

Cherry Creek RNA, Coos Bay District, OR (BLM)

1. Baseline water monitoring: flow, temperature, sediment
   Current; 1982
   BLM and Coos and Curry Counties
   Lloyd Fritz, Coos Bay District, Bureau of Land Management, Coos Bay, OR 97420

2. Composition and structure of old-growth forests in the Oregon Coast Range
   Completed; 1974-78
   Oregon State University and NPS
   Glenn Juday, Institute of Northern Forestry, Fairbanks, AK 99701

3. Distribution and role of conifer needle endophytes (fungi on needle surfaces)
   Completed; 1976-78
   NSF and University of Oregon
   George Carroll, Biology Department, University of Oregon, Eugene, OR 97403

4. Vegetation classification of old-growth wildlife habitat
   Current; 1983
   FS
   Tom Spies, Forestry Sciences Laboratory, 3200 Jefferson Way, Corvallis, OR 97331

Carroll and Carroll 1978 (3); Franklin and others 1972; Old-Growth Definition Task Group 1986 (4); Spies and others 1985 (4).

Chowder Ridge Proposed RNA, Mount Baker-Snoqualmie National Forest, WA (FS)

1. Bryophytes of Chowder Ridge
   Completed; 1983-85
   University of British Columbia and Western Washington University
   Ron Taylor, Western Washington University, Bellingham, WA 98225

2. Foraging preferences of alpine birds in relation to snow accumulation
   Completed; 1983-85
   Western Washington University
   Rod Norvell, 5809 Western View Place, Mount Airy, MD 21771

3. Genecological studies of *Cerastium arvense*
   Completed; 1983-85
   Western Washington University
   Ronald Taylor, Western Washington University, Bellingham, WA 98225

4. Lichens of Chowder Ridge
   Completed; 1984-85
   Arizona State University and Washington Native Plant Society
   Bruce Ryan, Arizona State University, Flagstaff, AZ 86011

5. Pollination ecology of an alpine fell-field community
   Completed; 1983-85
   Western Washington University and Washington Native Plant Society
   Ron Taylor, Western Washington University, Bellingham, WA 98225

Norvell 1985; Ryan 1985 (4); Shaw 1982 (5); Shaw and Taylor 1986 (5); Wagstaff 1986 (3).

Coquille River Falls RNA, Siskiyou National Forest, OR (FS)

1. Behavior of *Phytophthora* root rot
   Current; 1950
   Oregon State University
   Lewis Roth and Everett Hansen, Department of Botany and Plant Pathology, Oregon State University, Corvallis, OR 97331

2. Distribution and role of conifer needle endophytes (fungi on needle surfaces)
   Completed; 1976-78
   NSF and University of Oregon
   George Carroll, Biology Department, University of Oregon, Eugene, OR 97403

3. Ecology of Port-Orford-cedar
   Current; 1974
   NSF and Oregon State University
   Don Zobel, Department of Botany and Plant Pathology, Oregon State University, Corvallis, OR 97331

4. Habitat relationships between Port-Orford-cedar and western redcedar
   Completed; 1979-82
   Oregon State University and FS
   Don Zobel, Department of Botany and Plant Pathology, Oregon State University, Corvallis, OR 97331

5. Community types of the Siskiyou Mountain province
   Current; 1981
   FS
   Tom Atzet, Siskiyou National Forest, Grants Pass, OR 97526

Atzet and Wheeler 1984 (5); Carroll and Carroll 1978 (2); Franklin and others 1972; Hawk 1977 (3); Imper 1981 (3); Plocher 1977; Zobel 1979 (3), 1980 (3), 1983 (3).

Craig Mountain Lake Proposed RNA, Wallowa-Whitman National Forest, OR (FS)

1. Ecological classification of subalpine meadows
   Current; 1980
   FS
   Charles Johnson, Wallowa-Whitman National Forest, Baker, OR 97814

Diamond Point RNA, Willapa National Wildlife Refuge, WA (FWS)

Franklin and others 1972.

Duck Lake Proposed RNA, Wallowa-Whitman National Forest, OR (FS)

1. Ecological classification of forest stands and aquatic communities
   Current; 1980
   FS
   Charles Johnson, Wallowa-Whitman National Forest, Baker, OR 97814

East Kiger Plateau RNA, Burns District, OR (BLM)

1. Checklist of vascular plants of Steens Mountain
   Current; 1972
   FWS and personal (Karl Urban)
   Karl Urban, Blue Mountain Community College, Pendleton, OR 97801

2. Vegetational differences between ungrazed and grazed *Festuca* communities on Steens Mountain
   Completed; 1984
   Malheur Field Station
   Lucille Housley, Executive Director, Malheur Field Station, Box 260-E, Princeton, OR 97221

Anonymous 1985.

Eldorado Creek Proposed RNA, Wenatchee National Forest, WA (FS)

1. Causes of avoidance and tolerance of native plants to serpentine soils
   Current; 1984
   National Aeronautics and Space Administration and University of Washington
   Sarah Cooke, Botany Department, University of Washington, Seattle, WA 98105

2. Evidence for ecotypic differentiation in *Lupinus*-associated *Rhizobium*
   Completed; 1979-82
   Dutch Government
   D.M. Pegtel, Vakgroep Plantenoecologie, Biologisch Centrum, Rijksuniversiteit Groningen, Postbus 14, 9750 AA Haren (Groningen), Netherlands

3. Hyperaccumulation of nickel by *Arenaria rubella* (Wahlenb.) J.E. Smith (Cartophyllaceae) from Washington State
   Completed; 1982
   University of Washington and NSF
   Art Kruckeberg, Botany Department, University of Washington, Seattle, WA 98105

4. Morphological responses (leaf morphologies) of serpentine tolerant races of edaphically indifferent species
   Current; 1984
   National Aeronautics and Space Administration and University of Washington
   Caren Cymerman, Botany Department, University of Washington, Seattle, WA 98105

del Moral 1972, 1974, 1982; Kruckeberg 1964, 1969a; Maas and Stuntz 1969; Main 1974; Pegtel 1980 (2).

Flynn Creek RNA, Siuslaw National Forest, OR (FS)

1. Alsea Basin logging and aquatic resources study[3]
   Completed; 1958-73
   Oregon State University, FS (Pacific Northwest Region), U.S. Geological Survey, U.S. Environmental Protection Agency, Georgia Pacific Corporation, Oregon Department of Fish and Wildlife, and Fred Williamson (land owner)
   Supervisor, Siuslaw National Forest, Corvallis, OR 97333

2. Caddisfly community of Flynn Creek
   Current; 1980
   Oregon State University
   Robert Wisseman, Entomology Department, Oregon State University, Corvallis, OR 97331

3. Decomposition and role of wood in stream ecosystems
   Current; 1978
   NSF and Oregon State University
   Kenneth Cummins, Appalachian Environmental Laboratory, University of Maryland, Frostburg, MD 21532

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[3] The Alsea Basin Logging and Aquatic Resources Study was a cooperative research program initiated by the Oregon Legislature to determine the impact of timber harvest and road construction on aquatic resources. The study was begun in 1958 and included the Alsea Basin Soil Survey and detailed research in three small experimental watersheds. The Flynn Creek watershed and subsequent RNA served as the control watershed. Cooperators in the study included Oregon State University, Pacific Northwest Region of the USDA Forest Service, U.S. Geological Survey, Environmental Protection Agency, Georgia Pacific Corporation, Oregon Department of Fish and Wildlife, and Fred Williamson, landowner.

4. Hydrology, sediment transport, channel morphology, and organic debris in Oregon coastal streams
Current; 1976
Oregon State University
Robert Beschta, Forest Engineering Department, Oregon State University, Corvallis, OR 97331

Adams and Beschta 1980 (4); Au 1972 (1); Beschta 1978 (1, 4), 1980 (4), 1981a (4), 1981b (4), 1983a (4), 1983b (4); Beschta and others 1981 (4); Brown 1967 (1, 4), 1969 (1, 4), 1970 (1, 4), 1972 (1, 4); Brown and Krygier 1967 (1, 4), 1970 (4), 1971 (1, 4); Brown and others 1973 (1, 4); Campbell 1970 (1); Campbell and others 1982 (4); Chapman 1961 (1), 1962 (1), 1965 (1), 1966 (1); Chapman and Demory 1963 (1); Chapman and others 1961 (1); Coble 1960 (1), 1961 (1); Corliss and Dyrness 1964 (1, 4), 1965 (1, 4); Demory 1961 (1); Gilleran 1968 (1); Hall 1968b (1); Hall and Campbell 1968 (1); Hall and Knight 1981 (1); Hall and Krygier 1967 (1); Hall and Lantz 1969 (1); Hansmann 1969 (1); Hansmann and others 1971 (1); Hansmann and Phinney 1973 (1); Harper 1969 (1, 4); Harr and Krygier 1972 (1, 4); Harr and others 1975 (1, 4); Harris 1972 (1, 4), 1973 (1, 4); Harris and Williams 1971 (1, 4); Hsieh 1970 (1, 4), 1975 (1, 4); Jackson 1981 (4); Knight 1980 (1); Koski 1966 (1); Krohn 1968 (1); Lantz 1967 (1), 1970 (1); Lindsay 1975 (1); Lowry 1964 (1), 1965 (1), 1966 (1); Moring 1975a (1, 4), 1975b (1); Moring and Lantz 1975 (1); O'Leary and Beschta 1981 (4); Phillips and Campbell 1962 (1); Phillips and others 1966 (1); Ringler 1970 (1); Ringler and Hall 1975 (1); Robinson and Wisseman 1983 (2); U.S. Department of the Interior, Geological Survey 1977 (1, 4); Vansickle and Beschta 1983 (4); Williams 1964 (1, 4); Wisseman and Anderson 1984 (2), in press (2).

Fox Hollow RNA, Eugene District, OR (BLM)

1. Ecosystem dynamics in the coniferous forest of the Willamette Valley, Oregon, USA
Completed; Unknown-1977
University of Oregon
Carl Johannessen, Geography Department, University of Oregon, Eugene, OR 97403

Cole 1977 (1); Curtis 1986b.

Goat Marsh RNA, Gifford Pinchot National Forest, WA (FS)

1. Composition, structure, and distribution of subalpine forests in the Washington Cascades
Completed; 1962-76
FS
Jerry Franklin, Forestry Sciences Laboratory, 3200 Jefferson Way, Corvallis, OR 97331

2. Flora of the Goat Marsh Research Natural Area
   Completed; 1980-82
   Pacific Northwest Natural Area Committee
   Reid Schuller, Department of Natural Resources, Mail Stop EX-13, Olympia, WA 98504

3. Productivity analysis of a superlative noble fir stand
   Current; 1976
   FS
   Jerry Franklin, Forestry Sciences Laboratory, 3200 Jefferson Way, Corvallis, OR 97331

4. Relation of site index to habitat types in the Pacific Silver Fir Zone
   Current; 1967
   FS
   Jerry Franklin, Forestry Sciences Laboratory, 3200 Jefferson Way, Corvallis, OR 97331

Brockway and others 1983; Franklin 1966 (1), 1983 (3); Franklin and Wiberg 1979; Fujimori and others 1976 (3); Mullineaux and Crandell 1962; Ruetz 1981; Schuller and Cornelius 1982 (2).

Gold Lake Bog RNA, Willamette National Forest, OR (FS)

1. Bog communities and flora in the Cascade Range
   Current; 1976-79
   NPS
   Jerry Franklin, Forestry Sciences Laboratory, 3200 Jefferson Way, Corvallis, OR 97331

2. Hybridization of Gold Lake Bog populations of *Rana cascadae* and *R. pretiosa*
   Completed; 1984
   McMaster University
   David Green, Biology Department, McMaster University, Hamilton, Ontario, Canada L8S 4K1

Baugh 1975; Christy 1980; Christy and others 1982; Franklin and others 1972; Hemstrom and others 1982, 1985; Kezer 1978; Klopsch and others 1979; Seyer 1979 (1).

Goodlow Mountain RNA, Fremont National Forest, OR (FS)

1. Bark beetle activity investigation, 1922-40
   Completed; 1922-40
   FS and Bureau of Entomology and Plant Quarantine
   Sarah E. Greene, Forestry Sciences Laboratory, 3200 Jefferson Way, Corvallis, OR 97331

2. Distribution and role of conifer needle endophytes (fungi on needle surfaces)
   Completed; 1976-78
   NSF and University of Oregon
   George Carroll, Biology Department, University of Oregon, Eugene, OR 97403

3. Growth and yield studies--four permanent plots
   Completed; 1975-80
   FS
   William Hopkins, Silviculture Laboratory, Bend, OR 99701

4. Photo sampling of plant succession after fire
   Current; 1979
   FS
   William Hopkins, Silviculture Laboratory, Bend, OR 99701

Carroll and Carroll 1978 (2); Franklin and others 1972; Hopkins 1979 (3, 4).

Government Draw Proposed RNA, Wallowa-Whitman National Forest, OR (FS)

1. Permanent photo points to follow vegetation change
   Current; 1956
   FS
   Fred Hall, Ecologist, USDA Forest Service, Pacific Northwest Region, 319 S.W. Pine, Portland, OR 97208

Grass Mountain RNA, Salem District, OR (BLM)

1. Grass Mountain RNA monitoring program
   Current; 1984
   Salem District BLM Botany Project
   Larry R. Scofield, District Botanist, Bureau of Land Management, Salem, OR 97302

Green Mountain Proposed RNA, Mount Baker-Snoqualmie National Forest, WA (FS)

1. Plant associations and habitat types of the Mount Baker-Snoqualmie National Forest
   Current; 1983
   FS
   Jan Henderson, Olympic National Forest, Olympia, WA 98507

Hades Creek RNA, Olympic National Park, WA (NPS)

Buckhorn and Orr 1959; Crandell 1964; Danner 1955; Franklin and others 1972; Pomeroy and Dixon 1966.

Hagar Proposed RNA, Willamette National Forest, OR (FS)

1. Aquatic habitat utilization by salmonoids
   Current; 1976
   Oregon State University and NSF
   Jim Hall, Department of Fisheries and Wildlife, Oregon State University, Corvallis, OR 97331

2. Aquatic primary production
   Current; 1981
   Oregon State University and NSF
   Stan Gregory, Department of Fisheries and Wildlife, Oregon State University, Corvallis, OR 97331

3. Channel changes and geomorphic processes
   Current; 1981
   FS
   Fred Swanson, Forestry Sciences Laboratory, 3200 Jefferson Way, Corvallis, OR 97331

4. Comparison of small mammal use in upland riparian habitats
   Completed; 1982-84
   Oregon State University and NSF
   Arlene Doyle, Redwood Sciences Laboratory, Arcata, CA 95521

5. Distribution of Phellinus patches by habitat type
   Completed; 1978-79
   FS
   Don Knutson, 143 Bedford St. S.E., P.O. Box 14666, Minneapolis, MN 55414

6. Dynamics of riparian vegetation
   Current; 1982
   Oregon State University, NSF, and FS
   Art McKee, Forest Science Department, Oregon State University, Corvallis, OR 97331

7. Fish population dynamics
   Current; 1981
   Oregon State University and NSF
   Stan Gregory, Department of Fisheries and Wildlife, Oregon State University, Corvallis, OR 97331

8. Importance of fire history on the stand structure of Douglas-fir forests in the Pacific Northwest
   Completed; 1977-85
   Oregon State University
   Mark Klopsch, Forest Science Department, Oregon State University, Corvallis, OR 97331

9. Long-term successional dynamics of upland forests
Current; 1981
NSF and FS
Jerry Franklin, Forestry Sciences Laboratory, 3200 Jefferson Way, Corvallis, OR 97331

10. Microbial processes and dynamics of dissolved organic materials in streams
Current; 1981
Oregon State University and NSF
Stan Gregory, Department of Fisheries and Wildlife, Oregon State University, Corvallis, OR 97331

11. Microclimate of forest stands
Current; 1977
NSF and FS
Art McKee, Forest Science Department, Oregon State University, Corvallis, OR 97331

12. Old-growth wildlife habitat relationships--research and development: animals, birds, herpes
Completed; 1983-85
FS
Len Ruggiero, Forestry Sciences Laboratory, 3625 93rd Avenue S.W., Olympia, WA 98502

13. Retention of allocthanous input
Current; 1981
Oregon State University and NSF
Stan Gregory, Fisheries Department, Oregon State University, Corvallis, OR 97331

14. Seasonal dynamics of aquatic invertebrates
Current; 1981
Oregon State University and NSF
Norm Anderson, Entomology Department, Oregon State University, Corvallis, OR 97331

15. Sediment routing in disturbed and undisturbed watersheds
Current; 1981
Oregon State University, NSF, and FS
Fred Swanson, Forestry Sciences Laboratory, 3200 Jefferson Way, Corvallis, OR 97331

16. Upland versus riparian productivity
Current; 1981
Oregon State University and FS
Art McKee, Forest Science Department, Oregon State University, Corvallis, OR 97331

Campbell and Franklin 1979; Franklin and others 1986b, in press; Grant and others 1984; Gregory 1983; Klopsch 1985; Klopsch and others 1979; McKee and others 1978, 1981, 1982; Old-Growth Definition Task Group 1986 (12); Spies and others 1985 (12); Swanson 1981; Swanson and others 1982; Waring 1982; Waring and Franklin 1979.

Harney Lake RNA, Malheur National Wildlife Refuge, OR (FWS)

1. Factors affecting the ecology of small mammals on the Malheur National Wildlife Refuge
Completed; 1973-77
Oregon State University
George A. Feldhamer, c/o Zoology Department, Oregon State University, Corvallis, OR 97331

2. Snowy plover survey
Completed; 1980-81
FWS
Steve Herman, The Evergreen College, Olympia, WA 98505

Copeland 1979; Cornely 1980; Feldhamer 1977 (1); Herman and others 1981 (2); Malheur National Wildlife Refuge 1980; Piper and others 1939; Walker and Swanson 1968a.

Higley Creek RNA, Olympic National Park, WA (NPS)

Crandell 1964; Danner 1955; Franklin and others 1972; Kirk 1966; Sharpe 1956.

High Peak-Moon Creek RNA, Salem District, OR (BLM)

1. High Peak-Moon Creek RNA monitoring program
Current; 1984
Salem District BLM Botany Project
Larry R. Scofield, District Botanist, Bureau of Land Management, Salem, OR 97302

2. Monitoring study on Scoliopus hallii to determine biological requirements for the species and as a key indicator species to monitor riparian and wet area plant community structure
   Current; 1985
   Salem District BLM Botany Project
   Larry R. Scofield, District Botanist, Bureau of Land Management, Salem, OR 97302

Hoover Gulch Proposed RNA, Siskiyou National Forest, OR (FS)

1. Plant community and vegetation mapping of central Siskiyou Mountains
   Completed; 1982-84
   National Aeronautics and Space Administration
   Robert E. Frenkel, Geography Department, Oregon State University, Corvallis, OR 97331

Frenkel and Kiilsgaard 1984 (1).

Horse Ridge RNA, Prineville District, OR (BLM)

1. Baseline studies of bird and mammal populations
   Completed; 1967-77
   FWS
   Jay Gashwiler, c/o Silviculture Laboratory, Bend, OR 99701

2. Distribution and role of conifer needle endophytes (fungi on needle surfaces)
   Completed; 1976-78
   NSF and University of Oregon
   George Carroll, Biology Department, University of Oregon, Eugene, OR 97403

3. Relation of net primary productivity, leaf area, and biomass to vegetation zones in the Pacific Northwest
   Completed; 1976-79
   Oregon State University
   Henry Gholz, School of Forest Resources, University of Florida, Gainesville, FL 32611

4. Canopy modeling and leaf chemistry
   Current; 1985
   National Aeronautics and Space Administration
   Nancy Swanberg, Mail Stop 242, Moffett Field, CA 94035

5. Leaf area and spectral relationships
   Completed; 1983-84
   National Aeronautics and Space Administration
   Mike Spanner and Dave Peterson, Mail Stop 242, Moffett Field, CA 94035

6. Evaluating bidirectional canopy reflectance model
   Current; 1986
   National Aeronautics and Space Administration
   Allan Strahler, Geology and Geography Department, Hunter College, New York, NY 10021

Carroll and Carroll 1978; Franklin and others 1972; Gashwiler 1977 (1); Gholz 1979, 1980, 1982 (3); Spanner and others 1984 (5).

Hot Lakes RNA, Spokane District, WA (BLM)

Broch 1969.

Indian Creek RNA, Wallowa-Whitman National Forest, OR (FS)

1. Ecological classification of forest stands
   Current; 1985
   FS
   Charles Johnson, Wallowa-Whitman National Forest, Baker, OR 97814

Greene 1983.

The Island RNA, Prineville District, OR (BLM) and Ochoco National Forest, OR (FS)

Driscoll 1964.

Jackson Creek RNA, Olympic National Park, WA (NPS)

1. Community ecology of the Olympic Rain Forest
   Completed; 1970-74
   NSF
   Richard Fonda, Biology Department, Western Washington University, Bellingham, WA 98225

2. Ecology of the Roosevelt elk
   Current; 1976
   NPS
   Ed Starkey, National Park Service, Cooperative Park Studies Unit, College of Forestry, Oregon State University, Corvallis, OR 97331

3. Forest types of Olympic National Park
   Current; 1978
   NPS
   Bradley Smith, Forest Science Department, Oregon State University, Corvallis, OR 97331

Crandell 1964; Danner 1955; Franklin and others 1972; Henderson and others 1978; Jenkins 1979 (2), 1981 (2); Jenkins and Starkey 1980a (2), 1980b (2), 1982 (2); Kirk 1966; Leslie 1982 (2); Smith and Henderson 1986 (3).

Jordan Craters RNA, Vale District, OR (BLM)

1. Birds and mammals of sagebrush steppe in Oregon
   Completed; 1979-86
   BLM
   Chris Maser, Bureau of Land Management, 3200 Jefferson Way, Corvallis, OR 97331

2. Core sampling of lake sediments--Upper Cow Lake
   Current; 1986
   Washington State University
   Peter J. Mehringer, Jr., Washington State University, Pullman, WA 99163

3. Effect of beaver utilization on red willow in southeastern Oregon
   Completed; 1978-84
   BLM
   Robert Kindschy, Bureau of Land Management, P.O. Box 700, Vale, OR 97918

4. Geologic and minerals resources inventory of the Jordan Craters, Jackie Butte, and Saddle Butte volcanic fields, Malheur County, OR
   Completed; 1979
   BLM
   John W. Harbaugh, 609 Mission Street, Suite 400, San Francisco, CA 94105

5. Petrography of the basalts of the Cow Creek Lakes area, Malheur County, OR
   Completed; 1963-65
   University of Oregon
   Geology Department, University of Oregon, Eugene, OR 97403

Glad 1974; Harbaugh and Lambie 1979 (4); Hart 1983; Heady and Bartolome 1977; Kindschy 1960-77, 1985; Kindschy and Maser 1978; Maser 1974-76 (1); Millhollen 1965 (5); Newcomb 1962; Otto and Hutchison 1977; Packard 1976.

Lake Twenty-Two RNA, Mount Baker-Snoqualmie National Forest, WA (FS)

1. Plant associations and habitat types of the Mount Baker-Snoqualmie National Forest
   Current; 1983
   FS
   Jan Henderson, Olympic National Forest, Olympia, WA 98507

Franklin and others 1972; Wolcott 1961.

Lightning Creek Proposed RNA, Nez Perce National Forest, ID, administered by Wallowa-Whitman National Forest, OR (FS)

1. Ecological classification of forest stands and grasslands
   Current; 1982
   FS
   Charles Johnson, Wallowa-Whitman National Forest, Baker, OR 97814

Lily Lake Proposed RNA, Mount Baker-Snoqualmie National Forest, WA (FS)

1. Plant associations and habitat types of the Mount Baker-Snoqualmie National Forest
   Current; 1980
   FS
   Jan Henderson, Olympic National Forest, Olympia, WA 98507

Limpy Rock RNA, Umpqua National Forest, OR (FS)

1. Preliminary analysis of soil variability within specific landscape element and vegetation habitats in selected forests of western Oregon
   Completed; 1981-82
   Oregon State University
   D.J. Herbert Huddleston, Soils Department, Oregon State University, Corvallis, OR 97331

2. Relation of crown characteristics to remote sensing imagery characteristics
   Completed; 1983
   Oregon State University
   Bill Ripple, Environmental Remote Sensing Applications Laboratory, Oregon State University, Corvallis, OR 97331

3. Synecology of the Monotropideae
   Completed (monitoring continuing); 1982-86
   Oregon State University and FS
   Dan Luoma, Geography Department, Oregon State University, Corvallis, OR 97331

Luoma 1986 (3); Myhrum 1983.

Little Blitzen RNA, Burns District, OR (BLM)

1. Checklist of vascular plants of Steens Mountain
   Current; 1972
   FWS and personal (Karl Urban)
   Karl Urban, Blue Mountain Community College, Pendleton, OR 97801

2. Sensitive plants of Steens Mountain
   Current; 1972
   Personal (Karl Urban)
   FWS and Karl Urban, Blue Mountain Community College, Pendleton, OR 97801

Little Cultus Lake Proposed RNA, Deschutes National Forest, OR (FS)

1. National surface water survey (for acid rain research)
   Completed; 1985
   FS
   Rick Ross, USDA Forest Service, Pacific Northwest Region, 319 S.W. Pine, Portland, OR 97208

Little Granite Proposed RNA, Nez Perce National Forest, ID, administered by Wallowa-Whitman National Forest, OR (FS)

1. Ecological classification of forest stands and grasslands
   Current; 1983
   FS
   Charles Johnson, Wallowa-Whitman National Forest, Baker, OR 97814

Little Sink RNA, Salem District, OR (BLM)

1. Composition and structure of old-growth forests in the Oregon Coast Range
   Completed; 1974-78
   Oregon State University and NPS
   Glenn Juday, Institute of Northern Forestry, Fairbanks, AK 99701

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2. Distribution and role of conifer needle endophytes (fungi on needle surfaces)
   Completed; 1976-78
   NSF and University of Oregon
   George Carroll, Biology Department, University of Oregon, Eugene, OR 97403

3. Floral and faunal studies of Willamette foothill forests and ponds
   Current; 1973
   Personal (Morris Johnson)
   Morris Johnson, Biology Department, Western Oregon State College, Monmouth, OR 97361

4. Little Sink RNA monitoring program
   Current; 1984
   Salem District BLM Botany Project
   Larry R. Scofield, District Botanist, Bureau of Land Management, Salem, OR 97302

5. Population genetics of _Ambystoma_ _gracile_
   Current; 1985
   NSF
   Tommy Titus, Zoology Department, University of Kansas, Lawrence, KS 66044

Carroll and Carroll 1978 (2); Hawk 1974; Juday 1976 (1).

Little Wildhorse RNA, Burns District, OR (BLM)

1. Checklist of vascular plants of Steens Mountain
   Current; 1972
   FWS and personal (Karl Urban)
   Karl Urban, Blue Mountain Community College, Pendleton, OR 97801

Long Creek RNA, Mount Baker-Snoqualmie National Forest, WA (FS)

1. Plant associations and habitat types for the Mount Baker-Snoqualmie National Forest
   Current; 1983
   FS
   Jan Henderson, Olympic National Forest, Olympia, WA 98507

Franklin and others 1972.

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Long Draw RNA, Burns District, OR (BLM)

1. Floristic inventory
   Current; 1986
   Native Plant Society of Oregon
   Peter Zika and Lois Kemp, 1960 N.W. Lovejoy, #2, Portland, OR 97209

Lost Forest RNA, Lakeview District, OR (BLM)

1. Characteristics and causes of disjunct ponderosa pine forest
   Completed; 1960-63
   Oregon State University
   D.W. Berry, Northern Arizona University, Flagstaff, AZ 86011

2. Distribution and role of conifer needle endophytes (fungi on needle surfaces)
   Completed; 1976-78
   University of Oregon
   George Carroll, Biology Department, University of Oregon, Eugene, OR 97403

Allison 1954; Antevs 1938, 1955; Berry 1963 (1); Carroll and Carroll 1978 (2); Dole 1942; Hansen 1947; Howard 1946; Keen 1937; Moir and others 1973a; Morrison 1965; Waring 1908.

Maitlen Creek RNA, Colville National Forest, WA (FS)

Williams and Lillybridge 1985.

Maple Knoll RNA, William L. Finley National Wildlife Refuge, OR (FWS)

1. Bird communities in Willamette Valley forests
   Completed; 1967-72
   Oregon State University
   Refuge Manager, Finley National Wildlife Refuge, Corvallis, OR 97331

Anderson 1970a, 1970b; Franklin and others 1972.

Maple Mountain Proposed RNA, Okanogan National Forest, WA (FS)

1. Community types and long-term vegetation permanent sample plot of the Okanogan National Forest
   Current; 1980
   FS
   Clint Williams, Okanogan National Forest, Okanogan, WA 98840

Williams and Lillybridge 1983 (1).

Meeks Table RNA, Wenatchee National Forest, WA (FS)

1. Botanical reconnaissance of Meeks Table
   Completed; 1983-86
   FS
   Reid Schuller, Department of Natural Resources, Mail Stop EX-13, Olympia, WA 98504

2. Distribution and role of conifer needle endophytes (fungi on needle surfaces)
   Completed; 1976-78
   NSF and University of Oregon
   George Carroll, Biology Department, University of Oregon, Eugene, OR 97403

3. Energy and nutrient budgets in east-side forests
   Completed; 1973
   NSF, University of Washington, and FS
   Charles Grier, College of Forest Resources, University of Washington, Seattle, WA 98105

4. Community types and long-term vegetation permanent sample plots of the Wenatchee National Forest
   Current; 1977
   FS
   Clint Williams, Okanogan National Forest, Okanogan, WA 98840

5. Plant communities and soils of Meeks Table
   Completed; 1970-77
   FS
   Arthur R. Tiedemann, Forestry and Range Sciences Laboratory, Box 2315, La Grande, OR 97850

Carroll and Carroll 1978 (2); Franklin and others 1972; Schuller and Evans 1986 (1); Tiedemann and Klock 1977 (5).

Metolius RNA, Deschutes National Forest, OR (FS)

1. Classification of ecosystems in the Mazama pumice region
   Completed; 1973-85
   FS
   Len Volland, USDA Forest Service, Pacific Northwest Region, 319 S.W. Pine, Portland, OR 97208

2. Distribution and role of conifer needle endophytes (fungi on needle surfaces)
   Completed; 1976-78
   NSF and University of Oregon
   George Carroll, Biology Department, University of Oregon, Eugene, OR 97403

3. Forest ecosystem parameters that influence remotely sensed spectral characteristics
   Current; 1982
   National Aeronautics and Space Administration
   Chris Kiilsgaard, Geography Department, Oregon State University, Corvallis, OR 97331

4. Growth, yield, and mortality of old-growth ponderosa pine
   Current; 1981
   FS
   Sarah Greene, Forestry Sciences Laboratory, 3200 Jefferson Way, Corvallis, OR 97331

5. Quantitative study of normal snag conditions
   Current; 1979
   FS
   Bill Hopkins, Silviculture Laboratory, Bend, OR 99701

6. Relation of net primary productivity, leaf area, and biomass to vegetation zones in the Pacific Northwest
   Completed; 1976-79
   Oregon State University
   Henry Gholz, School of Forest Resources, University of Florida, Gainesville, FL 32611

7. Canopy modeling and leaf chemistry
   Current; 1985
   National Aeronautics and Space Administration
   Nancy Swanberg, Mail Stop 242, Moffett Field, CA 94035

8. Leaf area and spectral relationships
   Completed; 1983-84
   National Aeronautics and Space Administration
   Mike Spanner and Dave Peterson, Mail Stop 242, Moffett Field, CA 94035

9. Evaluating bidirectional canopy reflectance model
   Current; 1986
   National Aeronautics and Space Administration
   Allan Strahler, Geology and Geography Department, Hunter College, New York, NY 10021

Carroll and Carroll 1978 (2); Franklin and others 1972; Gholz 1979 (6), 1982 (6); Scott 1977; Spanner and others 1984 (8); Swedberg 1961, 1973; Volland 1976 (1).

Middle Santiam RNA, Willamette National Forest, OR (FS)

1. Growth, yield, and mortality of an old-growth Douglas-fir--western hemlock community
   Current; 1977
   FS
   Jerry Franklin, Forestry Sciences Laboratory, 3200 Jefferson Way, Corvallis, OR 97331

2. Mapping and monitoring of an active earthflow
   Current; 1979
   FS
   Fred Swanson, Forestry Sciences Laboratory, 3200 Jefferson Way, Corvallis, OR 97331

3. Riparian community classification
   Completed; 1973-79
   FS
   Jerry Franklin, Forestry Sciences Laboratory, 3200 Jefferson Way, Corvallis, OR 97331

4. Vegetation classification of old-growth wildlife habitat
   Current; 1983
   FS
   Tom Spies, Forestry Sciences Laboratory, 3200 Jefferson Way, Corvallis, OR 97331

Campbell and Franklin 1979 (3); Fujimori and others 1976; Greene and Franklin in press; Hicks 1982 (2); Klopsch and others 1979; Old-Growth Definition Task Group 1986 (4); Spies and others 1985 (4); Waring and Franklin 1979.

Mill Creek RNA, Mount Hood National Forest, OR (FS)

1. Classification of the Grand Fir and Ponderosa Pine Zones
   Current; 1982
   FS
   Nancy Halvorsen, Mount Hood National Forest, Gresham, OR 97030

2. Distribution and role of conifer needle endophytes (fungi on needle surfaces)
Completed; 1976-78
NSF and University of Oregon
George Carroll, Biology Department, University of Oregon, Eugene, OR 97403

Carroll and Carroll 1978 (2); Franklin and others 1972.

Mohawk RNA, Eugene District, OR (BLM)

1. Distribution and role of conifer needle endophytes (fungi on needle surfaces)
Completed; 1976-78
NSF and University of Oregon
George C. Carroll and F.E. Carroll, Biology Department, University of Oregon, Eugene, OR 97403

Carroll and Carroll 1978 (1); Curtis 1986c.

Myrtle Island RNA, Roseburg District, OR (BLM)

1. Flora and communities of Myrtle Island
Completed; 1970-79
Private
Ralph Thompson, Berea College, Berea, KY 40404

Franklin and others 1972; Thompson 1979 (1).

Neskowin Crest RNA, Siuslaw National Forest, OR (FS)

1. Composition and structure of old-growth forests in the Oregon Coast Range
Completed; 1974-78
Oregon State University and NPS
Glenn Juday, Institute of Northern Forestry, Fairbanks, AK 99701

2. Contribution rates and physical characteristics of large organic debris in Oregon Coast Range streams under second-growth forests
Current; 1985
Oregon State University
David Heiman, Forest Engineering Department, Oregon State University, Corvallis, OR 97331

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3. Distribution and role of conifer needle endophytes (fungi on needle surfaces)
Completed; 1976-78
NSF and University of Oregon
George Carroll, Biology Department, University of Oregon, Corvallis, OR 97331

4. Ecological monitoring of long-term effects of energy development
Completed; 1980-84
DOE
W.T. Hinds, Battelle Memorial Institute, Pacific Northwest Lab, Richland, WA 99352

5. Growth, mortality, and succession in a coastal spruce-hemlock forest
Current; 1978
FS
Sarah Greene, Forestry Sciences Laboratory, 3200 Jefferson Way, Corvallis, OR 97331

6. Logs as sites of tree regeneration
Current; 1981-86
NPS
Mark Harmon, Forest Science Department, Oregon State University, Corvallis, OR 97331

7. Mammals of the Oregon coast
Completed; 1970-81
University of Puget Sound and private
Chris Maser, Bureau of Land Management, 3200 Jefferson Way, Corvallis, OR 97331

8. Reproductive ecology of conifers in the Sitka Spruce Zone
Current; 1978
FS and University of Alberta
George LaRoi, Botany Department, University of Alberta, Edmonton, Alberta, Canada T6G 2E9

9. Vegetation of a coastal headland prairie
Completed; 1964-67
Oregon State University
William Chilcote, retired, Department of Botany and Plant Pathology, Oregon State University, Corvallis, OR 97331

Carroll and Carroll 1978 (3); Christy 1980; Davidson 1967 (9); Franklin and others 1986b (5); Greene 1982, 1984 (5); Harmon 1986 (6); Hemstrom and Logan 1986; Hinds 1984 (4); Juday 1976 (1); Madison 1957; Maser and others 1981 (7); McShane and others 1983 (4); Quay 1982; Ripley 1983.

North Fork Nooksack RNA, Mount Baker-Snoqualmie National Forest, WA (FS)

1. Characteristics of litter layers in northwestern forests
   Completed; 1960-65
   University of Washington
   Stanley P. Gessel, College of Forest Resources, University of Washington, Seattle, WA 98105

2. Flora, community types, and soils of North Fork Nooksack RNA
   Completed; 1978-81
   FS
   Western Washington University
   Richard Fonda, Biology Department, Western Washington University, Bellingham, WA 98225

3. Relationship between snowmelt and vegetation pattern
   Current; 1984
   Western Washington University
   Ray Evans, Botany Department, Western Washington University, Bellingham, WA 98225

4. Physiological response of red heather (*Phyllodoce empetriformis*) to drought
   Current; 1986
   Western Washington University
   Elizabeth Binney, Botany Department, Western Washington University, Bellingham, WA 98225

5. Plant associations and habitat types of the Mount Baker-Snoqualmie National Forest
   Current; 1984
   FS
   Jan Henderson, Olympic National Forest, Olympia, WA 98507

Evans 1986 (3); Fonda 1981 (2); Franklin and others 1972; Gessel and Balci 1965 (1); Misch 1952; Thomas and others 1981.

North Myrtle Creek RNA, Roseburg District, OR (BLM)

1. Ecological site classification of southwestern Oregon
   Current; 1981
   FS
   Bradley Smith, Forest Science Department, Oregon State University, Corvallis, OR 97331

Ochoco Divide RNA, Ochoco National Forest, OR (FS)

1. Classification of the forests of the Blue Mountain region
   Completed; 1956
   FS
   Fred Hall, USDA Forest Service, Pacific Northwest Region,
   319 S.W. Pine, Portland, OR 97208

2. Distribution and role of conifer needle endophytes (fungi on needle surfaces)
   Completed; 1976-78
   NSF and University of Oregon
   George Carroll, Biology Department, University of Oregon,
   Eugene, OR 97403

3. Ecological monitoring of long-term effects of energy development
   Completed; 1980-82
   DOE
   W.T. Hinds, Battelle Memorial Institute, Pacific Northwest
   Laboratory, Richland, WA 99352

4. Long-term photo analysis of vegetation change
   Current; 1956
   FS
   Fred Hall, USDA Forest Service, Pacific Northwest Region,
   319 S.W. Pine, Portland, OR 97208

5. Reintroduction of natural fire cycle
   Current; 1984
   FS
   Sarah Greene and Bill Hopkins, Silviculture Laboratory,
   Bend, OR 99701

Carroll and Carroll 1978 (2); Franklin and others 1972; Hall 1967, 1971 (1), 1973, 1978, 1979a (1, 5), 1979b, 1980a, 1980b; Hinds 1984 (3).

Olallie Ridge RNA, Willamette National Forest, OR (FS)

1. Disjunct flora of the western Cascade peaks
   Completed; 1963-68
   University of Oregon
   James Hickman, Botany Department, University of
   California-Berkeley, Berkeley, CA 94720

2. Distribution and role of conifer needle endophytes (fungi on needle surfaces)
   Completed; 1976-78
   NSF and University of Oregon
   George Carroll, Biology Department, University of Oregon, Eugene, OR 97403

3. Habitat type classification for western Cascade forests
   Current; 1967-76
   FS
   Jerry Franklin, Forestry Sciences Laboratory, 3200 Jefferson Way, Corvallis, OR 97331

Carroll and Carroll 1978 (2); Franklin and Mitchell 1967; Franklin and others 1972; Hemstrom and others 1982 (3), 1985 (3); Hickman 1968 (1), 1976 (1); Klopsch and others 1979.

Pataha Bunchgrass RNA, Umatilla National Forest, WA (FS)

1. Classification of the forests of the Blue Mountain region
   Current; 1956
   FS
   Fred Hall, USDA Forest Service, Pacific Northwest Region, 319 S.W. Pine, Portland, OR 97208

2. Long-term photo analysis of vegetative change
   Current; 1956
   FS
   Fred Hall, USDA Forest Service, Pacific Northwest Region, 319 S.W. Pine, Portland, OR 97208

Franklin and others 1972; Hall 1968a (1), 1970 (1), 1973 (1), 1980a (1).

Perry Creek Proposed RNA, Mount Baker-Snoqualmie National Forest, WA (FS)

1. Plant associations and habitat types of the Mount Baker-Snoqualmie National Forest
   Current; 1982
   FS
   Jan Henderson, Olympic National Forest, Olympia, WA 98507

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Pigeon Butte RNA, William L. Finley National Wildlife Refuge, OR (FWS)

1. Bird communities in Willamette Valley forests
   Completed; 1967-72
   Oregon State University
   Refuge Manager, Finley National Wildlife Refuge, Corvallis, OR 97331

2. Forest productivity along environmental gradients
   Completed; 1972-73
   Japanese Forest Experiment Station
   Takao Fujimori, c/o Jerry Franklin, Forestry Sciences Laboratory, 3200 Jefferson Way, Corvallis, OR 97331

3. Effects of environment on decomposition and nutrient-cycling processes
   Completed; 1974-76
   NSF
   Oregon State University
   Kermit Cromack, Forest Science Department, Oregon State University, Corvallis, OR 97331

Anderson 1970a (1), 1970b (1), 1972 (1); Bickford 1979; Franklin and others 1972; Thilenius 1964, 1968.

Pine Creek RNA, Turnbull National Wildlife Refuge, WA (FWS)

1. Ecology of snail, *Lymnaea stagnalis*
   Current; 1967
   Eastern Washington University
   Bruce Lang, Biology Department, Eastern Washington University, Cheney, WA 99004

2. Epiphytic lichens on ponderosa pine
   Completed; 1972-75
   Eastern Washington University
   Horace Sims, Biology Department, Eastern Washington University, Cheney, WA 99004

3. Flora of Turnbull National Wildlife Refuge
   Current; 1975
   Eastern Washington University
   Ken Swedberg, Biology Department, Eastern Washington University, Cheney, WA 99004

4. Myxomycetes on ponderosa pine logs
Completed; 1969-70
Eastern Washington University
Robert Carr, Turnbull Laboratory for Ecological Studies, Eastern Washington University, Cheney, WA 99004

Bretz 1959; Donaldson and Giese 1968; Franklin and others 1972; Lang 1977 (1); Stevens 1975 (2); Zabel 1970 (4).

Pleasant Valley Proposed RNA, Wallowa-Whitman National Forest, OR (FS)

1. Ecological classification of grasslands and forest stands
Current; 1980
FS
Charles Johnson, Wallowa-Whitman National Forest, Baker, OR 97814

2. Study of vegetation and grazing with three-way exclosures
Current; 1964
FS
Charles Johnson, Wallowa-Whitman National Forest, Baker, OR 97814

Poker Jim Ridge RNA, Hart Mountain National Wildlife Refuge, OR (FWS)

Greene and Copeland 1984; Larson 1965; Walker and Swanson 1968b.

Port-Orford-Cedar RNA, Siskiyou National Forest, OR (FS)

1. Behavior of *Phytophthora* root rot
Current; 1950
Oregon State University
Lewis Roth and Everett Hansen, Department of Botany and Plant Pathology, Oregon State University, Corvallis, OR 97331

2. Distribution and role of conifer needle endophytes (fungi on needle surfaces)
Completed; 1976-78
NSF and University of Oregon
George Carroll, Biology Department, University of Oregon, Eugene, OR 97403

3. Ecology of Port-Orford-cedar
Current; 1974
NSF
Oregon State University
Don Zobel, Department of Botany and Plant Pathology, Oregon State University, Corvallis, OR 97331

4. Habitat relationships between Port-Orford-cedar and western redcedar
   Current; 1979-82
   Oregon State University and FS
   Don Zobel, Department of Botany and Plant Pathology, Oregon State University, Corvallis, OR 97331

5. Community types of the Siskiyou Mountains Province
   Current; 1981
   FS
   Tom Atzet, Siskiyou National Forest, Grants Pass, OR 97526

Atzet and Wheeler 1984 (5); Carroll and Carroll 1978 (2); Franklin and others 1972; Hawk 1977 (3, 4); Imper 1981 (3, 4); Lawson 1983; Zobel 1980 (3, 4).

Pringle Falls RNA, Deschutes National Forest, OR (FS)

1. Age structure and spatial pattern of old-growth ponderosa pine
   Completed; 1981-85
   FS
   Joseph Means, Forestry Sciences Laboratory, 3200 Jefferson Way, Corvallis, OR 97331

2. Baseline studies of bird and mammal populations
   Completed; 1967-77
   FWS
   Jay Gashwiler, c/o Silviculture Laboratory, Bend, OR 99701

3. Classification of ecosystems in the Mazama pumice region
   Completed; 1971-85
   FS
   Len Volland, USDA Forest Service, Pacific Northwest Region, 319 S.W. Pine, Portland, OR 97208

4. Distribution and role of conifer needle endophytes (fungi on needle surfaces)
   Completed; 1976-78
   NSF and University of Oregon
   George Carroll, Biology Department, University of Oregon, Eugene, OR 97403

5. Effects of environment on decomposition and nutrient-cycling processes
   Completed; 1974-76
   NSF and Oregon State University
   Kermit Cromack, Forest Science Department, Oregon State University, Corvallis, OR 97331

6. Growth of ponderosa and lodgepole pine forests
   Completed; 1960-70
   FS
   Jim Barrett, 61555 Ward Road, Bend, OR 99701

7. Seed production by ponderosa and lodgepole pines
   Completed; 1953-75
   FS
   Walt Dahm and Jim Barrett, 61555 Ward Road, Bend, OR 99701

8. Reintroduction of "natural" fire
   Current; 1985
   FS
   Ken Seidel, Silviculture Laboratory, 1027 N.W. Trenton Avenue, Bend, OR 97701

Bork 1985 (8); Carroll and Carroll 1978 (4); Dahms and Barrett 1975 (7); Franklin and others 1972; Gashwiler 1977 (2); Morrow 1985 (1); Mowat 1954; Tarrant 1947; U.S. Department of Agriculture, Forest Service 1938; Volland 1976 (3).

Pyramid Lake RNA, North Cascades National Park, WA (NPS)

1. Collections of Hepaticae, genus Porella
   Completed; 1981
   College of Great Falls, MT
   Won Shic Hong, College of Great Falls, Great Falls, MT 59405

2. Monitoring water quality, chemistry, and aquatic life of Pyramid Lake RNA
   Current; 1971
   NPS
   Robert Wasem, North Cascades National Park, Sedro Woolley, WA 98284

Zobel and Wasem 1979.

Quinault RNA, Olympic National Forest, WA (FS)

1. Ecological monitoring of long-term effects of energy development
   Completed; 1980-84
   DOE
   W.T. Hinds, Battelle Memorial Institute, Pacific Northwest Laboratory, Richland, WA 99352

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2. Effects of acid rain on nitrogen fixation in western Washington coniferous forests
   Completed; 1974
   NSF
   Oscar Soule, The Evergreen College, Olympia, WA 98505

3. Growth and yield of Sitka spruce-western hemlock stands
   Current; 1982
   FS
   Sarah Greene, Forestry Sciences Laboratory, 3200 Jefferson Way, Corvallis, OR 97331

4. Logs as sites of tree regeneration
   Completed; 1981-86
   NPS
   Mark Harmon, Forest Science Department, Oregon State University, Corvallis, OR 97331

5. Plant associations and habitat types of the Olympic National Forest
   Current; 1980
   FS
   Jan Henderson, Olympic National Forest, Olympia, WA 98507

Crandell 1964; Danner 1955; Denison 1977 (2); Denison and others 1976 (2); Franklin and others 1972; Henderson and Peter 1981 (5); Hinds 1984 (1); Hinds and others 1981 (1); McShane and others 1983 (1); Shelford 1963; Skalski and others 1981 (1); Thomas and others 1981 (1).

Rainbow Creek RNA, Umatilla National Forest, WA (FS)

1. Classification of the forests of the Blue Mountain region
   Current; 1956
   FS
   Fred Hall, USDA Forest Service, Pacific Northwest Region, 319 S.W. Pine, Portland, OR 97208

2. Tree and stand growth after defoliation by Douglas-fir tussock moth
   Current; 1973
   FS
   Boyd Wickman, Forestry and Range Sciences Laboratory, La Grande, OR 97850

Franklin and others 1972; Hall 1973 (1), 1978 (1), 1979b (1), 1980b; Wickman 1978 (2); Wickman and others 1980 (2).

Rattlesnake Hills RNA, Arid Lands Ecology (ALE) Reserve, WA (DOE)

1. Arid land ecology[4]
   Current; 1965
   DOE
   L.E. Rogers, Battelle, Pacific Northwest Laboratory, P.O. Box 999, Richland, WA 99352

2. National Environmental Research Park[5]
   Current; 1977
   DOE
   W.H. Rickard, Battelle, Pacific Northwest Laboratory, P.O. Box 999, Richland, WA 99352

3. University-supported ecological studies[6]
   Current; 1980
   NSF and Washington State University
   R.N. Mack, A.A. Black, Jeff Johansen, William Rayburn, Washington State University, Pullman, WA 99164-2930

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[4] Studies include primary and secondary productivity, mineral cycling, and water balance. Funding is provided by the U.S. Department of Energy, Office of Health and Environmental Research, Ecological Research Division, Washington, DC.

[5] Studies in this category are provided logistic support by the U.S. Department of Energy, Office of Health and Environmental Research, Ecological Research Division, Washington, DC, for student research leading to graduate degrees. Stipends are provided through the Tri Cities University Center, c/o Dr. Bryan Valett, Director, Northwest Organization of Colleges and Universities for Science, 100 Sprout Road, Richland, WA 99352. Ongoing student research includes radiotelemetry studies of free-roaming elk and coyotes and ecological studies of two lupine populations.

[6] Ongoing studies in this category include ecological genetics of cheatgrass, response of soil algae to wildfire, and response of shrub-steppe plants to Mount St. Helens ash fall. Funding is provided for ongoing studies by the National Science Foundation and Washington State University.

Allen 1980 (2); Cline and others 1977a (1), 1977b (1); Cline and Rickard 1973 (1), 1974 (1); Fitzner 1978a (2), 1978b (2); Fitzner and others 1978 (1); Franklin and others 1972 (3); Gano and Rickard 1982 (3); Hajek 1966 (1); Hajek and Wildung 1969 (1); Hakonson and Rickard 1969 (1); Harr and Price 1972 (1); Hedlund and Rickard 1981 (1); Hinds 1973 (1), 1974 (1), 1975 (1), 1979 (1); Hinds and others 1979 (1); Hinds and Rickard 1968 (1), 1973 (1); Hinds and Rotenberry 1979 (1); Hinds and Thorp 1969 (1); Johnson 1974 (2); Kritzman 1970 (3); Langham 1970 (2); Mack 1971 (2); Mack and Pyke 1984 (3); McCorquodale 1985 (1); McCullough 1975 (2); O'Farrell 1972 (1), 1975a (1), 1975b (1), 1975c (1); O'Farrell and Dilley 1974 (1); O'Farrell and others 1972 (1), 1973 (1), 1974 (1), 1975 (1); Price 1965 (2), 1966 (2); Rickard 1964 (1), 1965a (1), 1965b (1), 1965c (1), 1965d (1), 1967a (1), 1967b (1), 1968 (1), 1970a (1), 1970b (1), 1971 (1), 1981 (1), 1982 (1), 1985a (1), 1985b (1), 1985c (1); Rickard and Cline 1965 (1); Rickard and Cushing 1982; Rickard and Garland 1983 (1); Rickard and Haverfield 1965 (1); Rickard and Keough 1968 (1); Rickard and McShane 1984 (1); Rickard and others 1971 (1), 1973a (1), 1973b (1), 1974 (1), 1975 (1), 1976 (1), 1977 (1), 1978 (1), 1982 (1); Rickard and Price 1984 (1); Rickard and Rogers 1983 (1); Rickard and Sauer 1982a (1), 1982b (1); Rickard and Van Scoyoc 1984 (1); Rickard and Warren 1981 (1); Rogers and others 1976 (1); Rogers and Rickard 1975 (1); Rogers and Uresk 1974 (1); Rogers and Woodley 1978 (1); Rotenberry 1980 (2); Rotenberry and others 1975 (1), 1979 (1); Routson and others 1977 (1); Rupp 1969 (2); Sauer and Uresk 1976 (1); Schreiber 1973 (2); Springer 1979 (2), 1982 (2); Steigers and Flinders 1980 (2); Stoel 1976 (2); Uresk 1976 (1); Uresk and Cline 1976 (1); Uresk and others 1976a (1), 1976b (1); Uresk and Rickard 1975 (1); Wildung 1977 (1); Wildung and others 1968 (1), 1971 (1), 1975 (1).

Rooster Comb RNA, Burns District, OR (BLM)

1. Checklist of vascular plants of Steens Mountain
   Current; 1972
   FWS and personal (Karl Urban)
   Karl Urban, Blue Mountain Community College, Pendleton, OR 97801

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Saddleback Mountain RNA, Salem District, OR (BLM)

1. Monitoring study on Scoliopus hallii to determine biological requirements for the species and, because it is a key indicator species, to monitor riparian and wet area plant community structure
   Current; 1985
   Salem District BLM Botany Project
   Larry R. Scofield, District Botanist, Bureau of Land Management, Salem, OR 97302

2. Saddleback Mountain RNA monitoring program
   Current; 1985
   Salem District BLM Botany Project
   Larry R. Scofield, District Botanist, Bureau of Land Management, Salem, OR 97302

3. Composition and structure of old-growth forests in the Oregon Coast Range
   Completed; 1974-78
   Oregon State University and NPS
   Glenn Juday, Institute of Northern Forestry, Fairbanks, AK 99700

Juday 1976 (3); Macnab 1958.

Salmo RNA, Colville National Forest, WA (FS)

1. Community types and long-term vegetation permanent sample plots of the Colville National Forest
   Current; 1980
   FS
   Clint Williams, Okanogan National Forest, Okanogan, WA 98840

Wellner [1986]; Williams and Lillybridge 1985 (1).

Silver Lake RNA, North Cascades National Park, WA (NPS)

1. Botanical reconnaissance of Silver Lake
   Completed; 1979-84
   NPS
   Robert Wasem, North Cascades National Park, Sedro Woolley, WA 98284

2. Monitoring of Silver Lake for acidification
   Current; 1979
   NPS, Environmental Protection Agency, and State agencies
   Robert Wasem, North Cascades National Park, Sedro Woolley, WA 98284

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3. Monitoring at Silver Lake, including water quality, bathymetric map, bird and mammal survey
   Current; 1979
   NPS
   Robert Wasem, North Cascades National Park, Sedro Woolley, WA 98284

Greene and others 1984 (1); Lesher 1984 (1); Post and others 1971; Shideler 1965.

Sister Rocks RNA, Gifford Pinchot National Forest, WA (FS)

1. Classification of the Silver Fir Zone
   Completed; 1979-82
   FS
   Nancy Halvorsen, Mount Hood National Forest, Gresham, OR 97030

2. Composition, structure, and distribution of subalpine forests in the Washington Cascades
   Completed; 1962-76
   FS
   Jerry Franklin, Forestry Sciences Laboratory, 3200 Jefferson Way, Corvallis, OR 97331

3. Cone production of upper-slope tree species
   Current; 1961
   FS
   Jerry Franklin, Forestry Sciences Laboratory, 3200 Jefferson Way, Corvallis, OR 97331

4. Distribution and role of conifer needle endophytes (fungi on needle surfaces)
   Completed; 1976-78
   NSF and University of Oregon
   George Carroll, Biology Department, University of Oregon, Eugene, OR 97403

Brockway and others 1983 (1); Carroll and Carroll 1978 (4); Cornelius 1982; Franklin 1966 (2); Franklin and others 1972.

South Fork Willow Creek RNA, Burns District, OR (BLM)

1. Sensitive plants of Steens Mountain
   Current; 1972
   Personal (Karl Urban) and FWS
   Karl Urban, Blue Mountain Community College, Pendleton, OR 97801

Steamboat Mountain RNA, Gifford Pinchot National Forest, WA (FS)

1. Classification of the Silver Fir Zone
   Completed; 1979-82
   FS
   Nancy Halvorsen, Mount Hood National Forest, Gresham, OR 97030

2. Composition, structure, and distribution of subalpine forests in the Washington Cascades
   Completed; 1962-76
   FS
   Jerry Franklin, Forestry Sciences Laboratory, 3200 Jefferson Way, Corvallis, OR 97331

3. Cone and seed production by upper-slope tree species (subalpine fir and mountain hemlock)
   Current; 1961
   FS
   Jerry Franklin, Forestry Sciences Laboratory, 3200 Jefferson Way, Corvallis, OR 97331

4. Flora of Steamboat Mountain RNA
   Completed; 1980-81
   Pacific Northwest Natural Area Committee
   Reid Schuller, Department of Natural Resources, Mail Stop EX-13, Olympia, WA 98504

5. Growth, mortality, and succession in subalpine forests
   Current; 1975
   FS
   Jerry Franklin, Forestry Sciences Laboratory, 3200 Jefferson Way, Corvallis, OR 97331

Bridge 1973; Brockway and others 1983 (1); Franklin 1966 (2), 1968 (3); Franklin and Mitchell 1967 (2); Franklin and others 1974 (3); Greene and Frenkel 1986; Schuller and Frenkel 1981 (4); Schuster and others 1978; Wise 1970.

Stetattle Creek RNA, North Cascades National Park, WA (NPS)

1. Fish surveys of lower Stetattle Creek
   Completed; 1974-76
   NPS
   Robert Wasem, North Cascades National Park, Sedro Woolley, WA 98284

2. Limnological monitoring at Azure Lake
   Current; 1980
   NPS
   Robert Wasem, North Cascades National Park, Sedro Woolley, WA 98284

3. Monitoring water quality at Stetattle Creek
   Current; 1978
   NPS
   Robert Wasem, North Cascades National Park, Sedro Woolley, WA 98284

4. Vegetation mapping by use of remote sensing
   Completed; 1980
   NPS
   Gary Waggoner, Remote Sensing Section, National Park Service, Denver Service Center, Lakewood, CO 80225

5. Vegetation surveys of Stetattle Creek RNA
   Completed; 1979-80
   Western Washington University
   Ron Taylor, Biology Department, Western Washington University, Bellingham, WA 98225

Agee and Wasem [1987] (2, 3, 4); Douglas 1970; Douglas and Ballard 1971; Douglas and Bliss 1977; Waggoner 1980 (4); Wagstaff and Taylor 1980 (5).

Stinking Lake RNA, Malheur National Wildlife Refuge, OR (FWS)

1. Factors affecting the ecology of small mammals on the Malheur National Wildlife Refuge
   Completed; 1973-77
   Oregon State University
   George A. Feldhamer, c/o Zoology Department, Oregon State University, Corvallis, OR 97331

2. Snowy plover survey
   Completed; 1980-81
   FWS
   Steve Herman, The Evergreen College, Olympia, WA 98505

Copeland and Greene 1982; Cornely 1980; Feldhamer 1977 (1); Herman and others 1981 (2); Oregon State Water Resources Board 1969; U.S. Department of the Interior, Fish and Wildlife Service 1981.

Thompson Clover RNA, Wenatchee National Forest, WA (FS)

1. Botanical reconnaissance and monitoring
   Current; 1982
   Personal (Reid Schuller)
   Reid Schuller, Department of Natural Resources, Mail Stop EX-13, Olympia, WA 98504

2. Ecological life history of *Trifolium thompsonii*
   Completed; 1975-77
   University of Washington
   Joan Canfield, c/o A. Kruckeberg, Botany Department, University of Washington, Seattle, WA 98105

3. Community types and long-term vegetation permanent sample plots of the Wenatchee National Forest
   Current; 1979
   FS
   Clint Williams, Okanogan National Forest, Okanogan, WA 98840

Canfield 1977 (2); Hitchcock and others 1961; Tiedemann and others 1977.

Thornton T. Munger RNA, Gifford Pinchot National Forest, WA (FS)

1. Classification of Western Hemlock Zone
   Current; 1982-86
   FS
   Nancy Halvorsen, Mount Hood National Forest, Gresham, OR 97030

2. Composition, structure, and distribution of subalpine forests in the Washington Cascades
   Completed; 1962-76
   FS
   Jerry Franklin, Forestry Sciences Laboratory, 3200 Jefferson Way, Corvallis, OR 97331

3. Distribution and role of conifer needle endophytes (fungi on needle surfaces)
   Completed; 1976-78
   NSF and University of Oregon
   George Carroll, Biology Department, University of Oregon, Eugene, OR 97403

4. Dynamics of coarse woody debris in Douglas-fir forests
   Completed; 1978-82
   NSF and Oregon State University
   Phil Sollins, Forest Science Department, Oregon State University, Corvallis, OR 97331

5. Ecological monitoring of long-term effects of energy development
   Completed; 1980-84
   DOE
   W.T. Hinds, Battelle Memorial Institute, Pacific Northwest Laboratory, Richland, WA 99352

6. Growth, mortality, and succession in an old-growth Douglas-fir forest
   Current; 1947
   FS
   Dean DeBell, Forestry Sciences Laboratory, Olympia, WA 98502

7. Mammal and bird monitoring in old-growth wildlife habitats
   Current; 1983
   FS
   S.D. West, University of Washington, Seattle, WA 98105

8. Seed survival of Douglas-fir in forest floor
   Completed; 1924-43
   FS
   Dean DeBell, Forestry Sciences Laboratory, Olympia, WA 98502

9. Vegetation classification of old-growth wildlife habitat
   Current; 1983
   FS
   Tom Spies, Forestry Sciences Laboratory, 3200 Jefferson Way, Corvallis, OR 97331

10. Flora of the Thornton T. Munger RNA
    Completed; 1980-82
    Pacific Northwest Natural Area Committee
    Reid Schuller, Department of Natural Resources, Mail Stop EX-13, Olympia, WA 98504

Carroll and Carroll 1978 (3); DeBell and Franklin 1986 (6); Franklin 1966 (2); Franklin and DeBell 1986 (6); Franklin and Hemstrom 1981; Franklin and others 1972, 1986b (6); Hinds 1984 (5); Hinds and others 1981; Isaac 1940, 1943; Kemp and Schuller 1982 (10); King 1961 (6); MacSiurtain 1979; McShane and others 1983 (5); Old-Growth Definition Task Group 1986 (9); Skalski and others 1981 (5); Sollins 1982 (4); Spies and others 1985 (9); Steele 1952; Steele and Worthington 1955 (6); Thomas and others 1981 (5); Topik and others 1985 (1); Waring and Franklin 1979.

Tiffany Mountain Proposed RNA, Okanogan National Forest, WA (FS)

1. Environmental impacts of wildland recreation
   Current; 1984
   Personal (Paul Saunders)
   Paul Saunders, Washington State University, Pullman, WA 99164-6410

2. Community types and long-term vegetation permanent sample plots of the Okanogan National Forest
   Current; 1976
   FS
   Clint Williams, Okanogan National Forest, Okanogan, WA 98840

Williams and Lillybridge 1983 (2).

Torrey-Charlton Proposed RNA, Willamette and Deschutes National Forests, OR (FS)

1. Growth and yield of mountain hemlock stands
   Current; 1976
   FS
   Joseph Means, Forestry Sciences Laboratory, 3200 Jefferson Way, Corvallis, OR 97331

2. Stress-induced wave mortality in subalpine forest ecosystems
   Current; 1981
   NSF and Oregon State University
   Richard Waring, Forest Science Department, Oregon State University, Corvallis, OR 97331

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3. Vegetation of Torrey Lake mire
Completed; 1976-86
FS and Oregon State University
Robert Frenkel, Geography Department, Oregon State University, Corvallis, OR 97331

Boone 1982 (2); Boone and others 1986 (2); Cromack 1985; Frenkel and others 1986 (3); Matson 1983; Matson and Boone 1984 (2); Matson and Waring 1984 (2); Waring and others 1986 (2).

Tum Tum Lake RNA, Burns District, OR (BLM)

1. Snowy plover study
Completed; 1980-81
FWS
Steve Herman, The Evergreen College, Olympia, WA 98505

Herman and others 1981 (1).

Turnbull Pine RNA, Turnbull National Wildlife Refuge, WA (FWS)

1. Abundance, cover frequency, and biomass data; some mapping of the trees and larger communities (student project)
Completed; 1976
Turnbull Laboratory for Ecological Studies
Robert Carr, Director, Turnbull Laboratory for Ecological Studies, Eastern Washington University, Cheney, WA 99004

2. Analysis of the stomach contents of wandering garter snakes (*Thamnophis elegans vagrans*) from eastern Washington
Completed; 1978-82
Theodore Roosevelt Memorial Fund and the Gaige Fund
Charles R. Peterson, Department of Anatomy, University of Chicago, Chicago, IL 60637

3. Aquatic insects of the Turnbull National Wildlife Refuge
Current; 1968
Eastern Washington University
Raymond Soltero, Biology Department, Eastern Washington University, Cheney, WA 99004

4. Baseline limnological data for Middle Findley Lake, Turnbull National Wildlife Refuge
Completed; 1985
Turnbull Laboratory for Ecological Studies
Don Nichols, Biology Department, Eastern Washington University, Cheney, WA 99004

5. Body temperature variation in free-ranging garter snakes (*Thamnophis elegans vagrans* and *Thamnophis sirtalis fitchi*)
Completed; 1978-82
Washington State University
Raymond Soltero, Biology Department, Eastern Washington University, Cheney, WA 99004

6. Cercaria study of the snails of the Findley Lakes
Completed; 1976-77
Eastern Washington University
Bruce Z. Lang, Eastern Washington University, Cheney, WA 99004

7. Chemical, physical, and biological characteristics of Upper Findley Lake (student project)
Completed; 1976
Eastern Washington University
Robert Carr, Turnbull Laboratory for Ecological Studies, Eastern Washington University, Cheney, WA 99004

8. Effects of season and host size on infection rates of Digenea in the snail *Lymnaea stagnalis*
Completed; 1969-71
Eastern Washington University
Robert Carr, Turnbull Laboratory for Ecological Studies, Eastern Washington University, Cheney, WA 99004

9. Endoparasite faunal dynamics on black bullheads (*Ictalurus melas*)
Completed; 1972-74
Eastern Washington University
Robert Carr, Turnbull Laboratory for Ecological Studies, Eastern Washington University, Cheney, WA 99004

10. Flora of the Turnbull Pine RNA
Current; 1975
Eastern Washington University
Robert Carr, Chairman, Biology Department, Eastern Washington University, Cheney, WA 99004

11. Food partitioning by terrestrial organisms (student project)
Completed; 1976
Eastern Washington University
Robert Carr, Turnbull Laboratory for Ecological Studies, Eastern Washington University, Cheney, WA 99004

12. Free swimming invertebrate communities of vernal pools in eastern Washington
Completed; 1982-84
University of Idaho and Turnbull Laboratory for Ecological Studies
Fred Rabe, Department of Biological Sciences, University of Idaho, Moscow, ID 83843

13. Interrelationships of grazing, rodent densities, and predation of artificial avian nests
Completed; 1972-74
Eastern Washington University
Raymond Soltero, Biology Department, Eastern Washington University, Cheney, WA 99004

14. Lake metabolism: light and dark bottle study of upper Findley Lake (student project)
Completed; 1976
Eastern Washington University
Robert Carr, Turnbull Laboratory for Ecological Studies, Eastern Washington University, Cheney, WA 99004

15. Life history of a Cephalogonimus (Trematoda from Ambystoma tigrinum)
Completed; 1969-72
Eastern Washington University
Raymond Soltero, Biology Department, Eastern Washington University, Cheney, WA 99004

16. Myxomycetes on ponderosa pine logs
Completed; 1969-70
Eastern Washington University
Robert Carr, Turnbull Laboratory for Ecological Studies, Eastern Washington University, Cheney, WA 99004

17. Observations of the aquatic invertebrates on a small pond in spring, 1976, after a drought year (student project)
Completed; 1976
Eastern Washington University
Robert Carr, Turnbull Laboratory for Ecological Studies, Eastern Washington University, Cheney, WA 99004

18. Predatory food habits of Formica obscuripes on Turnbull Pine RNA
Completed; 1976-78
Eastern Washington University
Robert Carr, Turnbull Laboratory for Ecological Studies, Eastern Washington University, Cheney, WA 99004

19. Relationship between the density levels of the beetle *Chrysolina gemellata* and its food plant *Hypericum perforatum* along upper Findley Lake (student project)
Completed; 1976
Eastern Washington University
Robert Carr, Turnbull Laboratory for Ecological Studies, Eastern Washington University, Cheney, WA 99004

20. Upper Findley Lake Coleoptera study (student project)
Completed; 1976
Eastern Washington University
Robert Carr, Director, Turnbull Laboratory for Ecological Studies, Eastern Washington University, Cheney, WA 99004

21. Vegetational analysis of the Turnbull Pine RNA (student project)
Completed; 1976
Eastern Washington University
Robert Carr, Director, Turnbull Laboratory for Ecological Studies, Eastern Washington University, Cheney, WA 99004

22. Vegetation comparison on grazed and protected sites
Completed; 1970-72
Eastern Washington University
Raymond Soltero, Biology Department, Eastern Washington University, Cheney, WA 99004

Bennington 1972 (22); Bretz 1959; Clevenger 1983; Current 1974 (9); Donaldson and Giese 1968; Dronen 1970 (15); Dronen and Lang 1974 (15); Franklin and others 1972; Kulp and Rabe 1984 (12); Lang and Dronen 1970; Lessor 1978 (18); Morig 1972 (8); Nichols 1985 (4); Peterson 1982 (2, 5), in press (2, 5); Zabel 1970 (16).

Twin Creek RNA, Olympic National Park, WA (NPS)

1. Community ecology of the Olympic Rain Forest
Completed; 1970-74
NSF
Richard Fonda, Biology Department, Washington State University, Bellingham, WA 99163

2. Ecology of the Roosevelt elk
Current; 1976
NPS
Ed Starkey, National Park Service, Cooperative Park Studies Unit, College of Forestry, Oregon State University, Corvallis, OR 97331

3. Precipitation chemistry and ecosystem function in Olympic National Park: baseline research for acid precipitation studies
   Current; 1984
   NPS
   Charles Grier, College of Forest Resources, University of Washington, Seattle, WA 98105

4. Use of six ecosystem parameters to detect low levels of airborne pollutants
   Current; 1984
   DOE
   Mark Harmon, Forest Science Department, Oregon State University, and Sarah Greene, Forestry Sciences Laboratory, 3200 Jefferson Way, Corvallis, OR 97331

5. Forest types of Olympic National Park
   Current; 1978
   NPS
   Bradley Smith, Forest Science Department, Oregon State University, Corvallis, OR 97331

Baker and others 1984 (4); Crandell 1964; Danner 1955; Fonda 1974 (1); Franklin and others 1972; Henderson and others 1978 (5); Jenkins 1979 (2), 1981 (2); Jenkins and Starkey 1980a (2), 1980b (2), 1982 (2); Leslie 1982 (2); Smith and Henderson 1986 (5); Wiersma and others 1985 (4).

Upper Elk Meadows RNA, Eugene District, OR (BLM)

Curtis 1986d.

Vance Knoll Proposed RNA, Wallowa-Whitman National Forest, OR (FS)

1. Ecological classification of grasslands
   Current; 1978
   FS
   Charles Johnson, Wallowa-Whitman National Forest, Baker, OR 97814

West Razz Lake Proposed RNA, Wallowa-Whitman National Forest, OR (FS)

1. Ecological classification of subalpine mountain meadows
   Current; 1980
   FS
   Charles Johnson, Wallowa-Whitman National Forest, Baker, OR 97814

Wet Weather Creek Proposed RNA, Olympic National Forest, WA (FS)

1. Plant associations and habitat types of the Olympic National Forest
   Current; 1982
   FS
   Jan Henderson, Olympic National Forest, Box 2288, Olympia, WA 98507

Wheeler Creek RNA, Siskiyou National Forest, OR (FS)

1. Distribution and role of conifer needle endophytes (fungi on needle surfaces)
   Completed; 1976-78
   NSF and University of Oregon
   George Carroll, Biology Department, University of Oregon, Eugene, OR 97403

2. Mammals of the Oregon coast
   Completed; 1970-81
   University of Puget Sound and private
   Chris Maser, Bureau of Land Management, 3200 Jefferson Way, Corvallis, OR 97331

Carroll and Carroll 1978 (1); Dott 1971; Dyrness and others 1973; Franklin and others 1972; Maser and others 1981 (2); Parker 1973.

Wildcat Mountain RNA, Willamette National Forest, OR (FS)

1. Carbon and nutrient budgets in forests of the Pacific Northwest
   Current; 1973
   NSF and Oregon State University
   Charles Grier, College of Forest Resources, University of Washington, Seattle, WA 98105

2. Cone and seed production by upper-slope conifers (noble fir, Pacific silver fir, and mountain hemlock)
   Current; 1961
   FS
   Jerry Franklin, Forestry Sciences Laboratory, 3200 Jefferson Way, Corvallis, OR 97331

3. Disjunct flora of the western Cascade peaks
   Completed; 1963-68
   University of Oregon
   James Hickman, Swarthmore College, Swarthmore, PA 19081

4. Distribution of birds and mammals in relation to plant communities
Completed; 1973-81
NSF and private
Ron Nussbaum, Zoology Department, University of Michigan, Ann Arbor, MI 48109

5. Distribution and role of conifer needle endophytes (fungi on needle surfaces)
Completed; 1976-78
NSF and University of Oregon
George Carroll, Biology Department, University of Oregon, Eugene, OR 97403

6. Ecological monitoring of long-term effects of energy development
Completed; 1980-84
DOE
W.T. Hinds, Battelle Memorial Institute, Pacific Northwest Laboratory, Richland, WA 99352

7. Effects of environment on forest leaf areas and productivity
Completed; 1976
NSF and Oregon State University
Richard Waring, Forest Science Department, Oregon State University, Corvallis, OR 97331

8. Effects of environment on decomposition and nutrient-cycling processes
Completed; 1974-76
NSF and Oregon State University
Kermit Cromack, Forest Science Department, Oregon State University, Corvallis, OR 97331

9. Environmental relations of forest communities in the western Cascades of Oregon
Current; 1970
NSF and Oregon State University
Arthur McKee, Forest Science Department, Oregon State University, Corvallis, OR 97331

10. Growth and yield of noble fir stands
Current; 1976
FS
Jerry Franklin, Forestry Sciences Laboratory, 3200 Jefferson Way, Corvallis, OR 97331

11. Habitat type classification for western Cascade forests
Completed; 1967-76
FS
Jerry Franklin, Forestry Sciences Laboratory, 3200 Jefferson Way, Corvallis, OR 97331

12. Relation of site index to habitat types in the Pacific Silver Fir Zone
Current; 1967
FS
Jerry Franklin, Forestry Sciences Laboratory, 3200 Jefferson Way, Corvallis, OR 97331

13. Distribution and abundance of lichens in old-growth conifer stands
Completed; 1977-80
NSF
Larry Pike, 38563 Wendling Road, Marcola, OR 97454

14. Meadow invasion by Abies procera
Current; 1986
Personal (Michael Trayner) and Oregon State University
Michael Trayner, Environmental School of Forestry, Syracuse, NY 13210

Carkin and others 1978 (2); Carroll and Carroll 1978 (5); Dyrness and others 1976 (11); Franklin 1968 (2), 1983 (10); Franklin and others 1972, 1974 (2), 1986b (10); Fujimori and others 1976 (7); Hawk and others 1978 (10, 11); Hemstrom and others 1982, 1985; Herman and others 1978; Hickman 1968 (3), 1976 (3); Hinds 1984 (6); Howe 1978 (13); Klopsch and others 1979; Vale 1981; Waring and Franklin 1979; Webb and others 1983; Weirs and Nussbaum 1975; Zobel and others 1976 (9).

Willamette Floodplain RNA, William L. Finley National Wildlife Refuge, OR (FWS)

1. Assessment of burning prairie vegetation in Willamette Valley
Current; 1982
FWS
Robert Frenkel, Geography Department, Oregon State University, Corvallis, OR 97331

2. Composition, succession, and productivity in Willamette Valley grasslands
Current; 1971
Pacific Northwest Natural Area Committee
Jerry Franklin, Forestry Sciences Laboratory, 3200 Jefferson Way, Corvallis, OR 97331

3. Effects of burning on prairie ecosystems
Current; 1972
Pacific Northwest Natural Area Committee
Jerry Franklin, Forestry Sciences Laboratory, 3200 Jefferson Way, Corvallis, OR 97331

4. Vegetation ecology of a _Fraxinus_ _latifolia_ community
Current; 1981
Oregon State University
Robert Frenkel, Geography Department, Oregon State University, Corvallis, OR 97331

5. Relation of water table to _Fraxinus_ communities
Current; 1983
Personal (Diana Bodker)
Diana Bodker, General Science, Oregon State University, Corvallis, OR 97331

Balster and Parsons 1968; Heinitz 1982 (4); Landa 1977; Parsons and others 1967.

Wolf Creek RNA, Okanogan National Forest, WA (FS)

1. Community types and long-term permanent sample plots of the Okanogan National Forest
Current; 1976
FS
Clint Williams, Okanogan National Forest, Okanogan, WA 98840

Franklin and others 1972; Williams and Lillybridge 1983 (1).

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Appendix: List of Research Natural Areas

All established RNA's are listed by State (Oregon first, then Washington) and agency. More than 70 proposed RNA's are in various stages of the planning process. Only the proposed RNA's with ongoing research are listed. Areas are not given for proposed RNA's because the RNA's have not yet been officially established.

Agency and address	Research Natural Area	Area
		Hectares (acres)
	OREGON	
	Bureau of Land Management	
Burns District, Bureau of Land Management 74 South Alvord Street Burns, OR 97720	East Kiger Plateau	502 (1,240)
	Little Blitzen	1028 (2,539)
	Little Wildhorse	97 (240)
	Long Draw	198 (489)
	Mickey Basin	227 (561)
	Pueblo Foothills	1020 (2,519)
	Rooster Comb	291 (719)
	Silver Creek	259 (640)
	South Fork Willow Creek	92 (227)
	Tum Tum Lake	616 (1,522)
Coos Bay District,Bureau of Land Management 333 South Fourth Street Coos Bay, OR 97420	Cherry Creek	239 (590)
Eugene District, Bureau of Land Management Box 10226 Eugene, OR 97401	Camas Swale	113 (279)
	Fox Hollow	66 (161)
	Mohawk	113 (294)
	Upper Elk Meadows	82 (205)
Lakeview District, Bureau of Land Management Box 151 Lakeview, OR 97630	Lost Forest	3628 (8,961)
Medford District, Bureau of Land Management 3040 Biddle Road Medford, OR 97501	Brewer Spruce	85 (210)
	Woodcock Bog	112 (277)

Prineville District, Bureau of Land Management Box 550 Prineville, OR 97754	Horse Ridge	243 (600)
	The Island	66 (162)
Roseburg District, Bureau of Land Management 777 N.W. Garden Valley Road Roseburg, OR 97470	Beatty Creek	160 (395)
	North Myrtle Creek	97 (240)
	Myrtle Island	11 (27)
	Tater Hill	68 (168)
Salem District, Bureau of Land Management 1717 Fabry Road S.E. Salem, OR 97302	The Butte	16 (40)
	Carolyn's Crown	105 (259)
	Grass Mountain	295 (729)
	High Peak-Moon Creek	618 (1,526)
	Little Sink	32 (79)
	Saddleback Mountain	55 (136)
Vale District, Bureau of Land Management Box 700 Vale, OR 97618	Honeycombs	4830 (11,930)
	Jordan Craters	12709 (31,391)
	Mahogany Mountain	130 (321)
	Stockade Mountain	308 (761)

Department of the Navy

Department of the Navy Western Division, Naval Facilities Command Building 138, Room 215 Naval Station Seattle, WA 98115	Boardman	2095 (5,175)

National Forests

Deschutes National Forest 1645 Highway 20 East Bend, OR 97701	Metolius	533 (1,317)
	Pringle Falls	545 (1,346)
	Little Cultus Lake proposed	
	Torrey-Charlton proposed	
Fremont National Forest Box 551 Lakeview, OR 97630	Goodlow Mountain	510 (1,260)
Malheur National Forest 139 N.E. Dayton John Day, OR 97845	Canyon Creek	283 (699)
Mount Hood National Forest 2955 N.W. Division Gresham, OR 97030	Bagby	227 (561)
	Bull Run	146 (361)
	Mill Creek	330 (815)

Ochoco National Forest	Ochoco Divide	777 (1,919)
Box 490	The Island	21 (52)
Prineville, OR 97754		
Rogue River National Forest	Abbott Creek	1077 (2,660)
333 W. 8th Street	Ashland	570 (1,408)
Medford, OR 97501		
Siskiyou National Forest	Coquille River Falls	202 (499)
Box 440	Port-Orford-Cedar	454 (1,121)
Grants Pass, OR 97526	Wheeler Creek	135 (333)
	Hoover Gulch proposed	
Siuslaw National Forest	Flynn Creek	271 (669)
Box 1148	Neskowin Crest	476 (1,176)
Corvallis, OR 97339		
Umpqua National Forest	Limpy Rock	760 (1,877)
Box 1008		
Roseburg, OR 97470		
Wallowa-Whitman National Forest	Indian Creek	401 (990)
Box 907	Alum Beds proposed	
Baker, OR 97814	Bills Creek proposed	
	Boner Flat proposed	
	Craig Mountain proposed	
	Duck Lake proposed	
	Government Draw proposed	
	Lightning Creek proposed	
	Little Granite proposed	
	Pleasant Valley proposed	
	Vance Knoll proposed	
	West Razz Lake proposed	
Willamette National Forest	Gold Lake Bog	188 (464)
Box 10607	Middle Santiam	463 (1,144)
Eugene, OR 97440	Olallie Ridge	291 (719)
	Wildcat Mountain	405 (1,000)
	Hagan proposed	
	Torrey-Charlton proposed	
Winema National Forest	Blue Jay	85 (210)
Box 1390		
Klamath Falls, OR 97601		

Wildlife Refuges

Hart Mountain National Wildlife Refuge Box 111 Lakeview, OR 97630	Poker Jim Ridge	259 (640)
Malheur National Wildlife Refuge Box 113 Burns, OR 97720	Harney Lake	12000 (29,640)
	Stinking Lake	626 (1,546)
William L. Finley National Wildlife Refuge Route 2, Box 208 Corvallis, OR 97333	Maple Knoll	40 (99)
	Pigeon Butte	28 (69)
	Willamette Floodplain	97 (240)

WASHINGTON

Bureau of Land Management

Spokane District, Bureau of Land Management 4217 E. Main Avenue Spokane, WA 99202	Hot Lakes	32 (79)

Department of Energy

Department of Energy Batelle Memorial Institute Pacific Northwest Laboratories Richland, WA 99352	Rattlesnake Hills	33350 (75,000)

National Forests

Colville National Forest 695 S. Main Colville, WA 99114	Maitlen Creek	254 (628)
	Salmo	563 (1,391)
Gifford Pinchot National Forest 500 W. 12th Street Vancouver, WA 98660	Butter Creek	226 (558)
	Cedar Flats	275 (679)
	Goat Marsh	484 (1,195)
	Sister Rocks	87 (215)
	Steamboat Mountain	567 (1,400)
	Thornton T. Munger	478 (1,181)

Mount Baker-Snoqualmie National Forest 1022 First Avenue Seattle, WA 98104	Lake Twenty-Two	320 (790)
	Long Creek	259 (640)
	North Fork Nooksack	569 (1,405)
	Chowder Ridge proposed	
	Green Mountain proposed	
	Lily Lake proposed	
	Perry Creek proposed	
Okanogan National Forest 1240 S. Second Street Okanogan, WA 98840	Wolf Creek	60 (148)
	Maple Mountain proposed	
	Tiffany Mountain proposed	
Olympic National Forest Box 2288 Olympia, WA 98507	Quinault	594 (1,467)
	Buckhorn Mountain proposed	
	Wet Weather Creek proposed	
Umatilla National Forest 2517 S.W. Hailey Avenue Pendleton, OR 97801	Pataha Bunchgrass	21 (52)
	Rainbow Creek	243 (600)
Wenatchee National Forest Box 811 Wenatchee, WA 98801	Meeks Table	28 (69)
	Thompson Clover	81 (200)
	Eldorado Creek proposed	
	National Parks	
Mount Rainier National Park Tahoma Woods Star Route Ashford, WA 98304	Butter Creek	809 (1,982)
North Cascades National Park Sedro Woolley, WA 98284	Boston Glacier	1251 (3,090)
	Pyramid Lake	48 (119)
	Silver Lake	683 (1,687)
	Stetattle Creek	5605 (13,850)
Olympic National Park 600 East Park Street Port Angeles, WA 98362	Hades Creek	227 (556)
	Higley Creek	194 (475)
	Jackson Creek	65 (159)
	Twin Creek	40 (98)
	Wildlife Refuges	
Columbia National Wildlife Refuge P.O. Drawer F Othello, WA 99344	Drumheller Sagebrush Steppe	269 (660)

Little Pend Oreille Wildlife Refuge Route 1 Colville, WA 99114	Baird Basin	65 (160)
	Varline Grove	60 (147)
Ridgefield National Wildlife Refuge 1309 N.E. 134th Street, Room C Vancouver, WA 98685	Blackwater Island	52 (129)
Turnbull Pine National Wildlife Refuge Route 3, Box 107 Cheney, WA 99004	Pine Creek	65 (160)
	Turnbull Pine	81 (200)
Willapa National Wildlife Refuge 1309 N.E. 134th Street, Room C Vancouver, WA 98685	Diamond Point	36 (88)

Greene, Sarah E.; Blinn, Tammy; Franklin, Jerry F. Research Natural Areas in Oregon and Washington: past and current research and related literature. Gen. Tech. Rep. PNW-197. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station; 1986. 115 p.

This publication lists all completed and current research projects in Research Natural Areas in Oregon and Washington and in those few Research Natural Areas in Idaho that are administered by National Forests in Oregon. The list includes project title, status, source of funding, and principal investigator and address. A list of publications pertaining to Research Natural Areas is also included. Where possible, publications and research projects are correlated. The publication outlines the scientific use and importance of Research Natural Areas as research sites for applied and basic studies. More than 200 projects and 500 publications are included for 88 Research Natural Areas and 23 proposed Research Natural Areas.

Keywords: Natural areas (research), bibliographies (research natural area), land management, research.

The Forest Service of the U.S. Department of Agriculture is dedicated to the principle of multiple use management of the Nation's forest resources for sustained yields of wood, water, forage, wildlife, and recreation. Through forestry research, cooperation with the States and private forest owners, and management of the National Forests and National Grasslands, it strives — as directed by Congress — to provide increasingly greater service to a growing Nation.

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Pacific Northwest Research Station
319 S.W. Pine St.
P.O. Box 3890
Portland, Oregon 97208